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massDOT AECOM

Comprehensive Regional Transit Plan Update 2020

Cape Ann Transportation Authority



Cape Ann Transportation Authority

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Acronyms

ADA	Americans with Disabilities Act
APC	Automatic Passenger Counter
APTA	American Public Transportation Association
AVL	Automatic Vehicle Locator
CARES	Coronavirus Aid, Relief, and Economic Security Act
CATA	Cape Ann Transportation Authority
CCRTA	Cape Cod Regional Transit Authority
CFR	Code of Federal Regulations
COA	Council on Aging
COVID-19	Novel Coronavirus Disease of 2019
CRTP	Comprehensive Regional Transit Plan
DDS	Department of Developmental Services
DMA	Division of Medical Assistance
FTA	Federal Transit Administration
FY	Fiscal Year
GHG	Greenhouse Gas
GWSA	Global Warming Solutions Act
HST	Human Services Transportation
LBE	Leading by Example
LEED	Leadership in Energy and Environmental Design
LEP	Limited English Proficiency
MART	Montachusett Regional Transit Authority
MassDOT	Massachusetts Department of Transportation
MBTA	Massachusetts Bay Transportation Authority
MOD	Mobility-on-Demand
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MVRTA	Merrimack Valley Regional Transit Authority
NTD	National Transit Database
PPE	Personal Protective Equipment
PTASP	Public Transportation Agency Safety Plan

RTA	Regional Transit Authority
TAM	Transit Asset Management
TCI	Transportation and Climate Initiative
TERM	Transit Economic Requirements Model
TVM	Ticket Vending Machine
ULB	Useful Life Benchmark

Glossary

Access: The opportunity to reach a given destination within a certain timeframe or without significant physical, social, or economic barriers.

Accessible Vehicle: A public transportation vehicle that does not restrict access, is usable, and provides allocated space and/or priority seating for individuals who use mobility devices.

Americans with Disabilities Act (ADA): The Americans with Disabilities Act, passed in July 1991, gave direction to local transit agencies to ensure full access to transportation for persons with disabilities.

Boardings: The total number of passengers getting on a transit vehicle during a specified period of time. See also Ridership and Passenger Trip.

Capital Cost: The cost of equipment and facilities required to support transportation systems, including vehicles, radios, shelters, software, etc.

Central Transfer Point: A central meeting place where routes or zonal demand response buses intersect so that passengers may transfer. Routes are often timed to facilitate transferring and depart once passengers have had time to transfer. When all routes arrive and depart at the same time, the system is called a pulse system. The central transfer point simplifies transfers when there are many routes (particularly radial routes), several different modes, and/or paratransit zones. A downtown retail area is often an appropriate site for a central transfer point, as it is likely to be a popular destination, a place of traffic congestion and limited parking, and a place where riders are likely to feel safe waiting for the next bus. Strategic placement of the transfer point can attract riders to the system and may provide an opportunity for joint marketing promotions with local merchants.

Circulator: A bus that makes frequent trips around a small geographic area with numerous stops around the route. It is typically operated in a downtown area or area attracting tourists, where parking is limited, roads are congested, and trip generators are spread around the area. It may be operated all-day or only at times of peak demand, such as rush hour or lunchtime.

Commuter Bus Service: Transportation designed for daily, round-trip service, which accommodates a typical 8-hour, daytime work shift (e.g., an outbound trip arriving at an employment center by 8 AM, with the return trip departing after 5 PM).

Coordination: Coordination means pooling the transportation resources and activities of several agencies. The owners of transportation assets talk to each other to find ways to mutually benefit their agencies and their customers. Coordination models can range in scope from sharing information, to sharing equipment and facilities, to integrated scheduling and dispatching of services, to the provision of services by only one transportation provider (with other former providers now purchasing services). Coordination may involve human service agencies working with each other or with public transit operations.

Cost per Boarding: The total operating expenditures of a route or service divided by the number of total boardings.

Cost per Revenue Mile or Hour: The total operating expenditures of a route or service divided by the number of revenue miles or revenue hours.

Demand Response Service: Service to individuals that is activated based on passenger requests. Usually passengers call the scheduler or dispatcher and request rides for dates and times. A trip is scheduled for that passenger, which may be canceled by the passenger. Usually involves curb-to-curb or door-to-door service. Trips may be scheduled on an advanced reservation basis or in “real-time.” Usually smaller vehicles are used to provide demand

response service. This type of service usually provides the highest level of service to the passenger but is the most expensive for the transit system to operate in terms of cost per trip. In rural areas with relatively high populations of elderly persons and persons with disabilities, demand response service is sometimes the most appropriate type of service. Sub-options within this service type are discussed in order of least structured to most structured, in terms of routing and scheduling.

- **Pure Demand Response Service:** Drivers pick up and drop off passengers at any point in the service area, based on instructions from the dispatcher. In pure demand response systems, the dispatcher combines immediate requests, reservations, and subscription service for the most efficient use of each driver's time.
- **Zonal Demand Response Service:** The service area is divided into zones. Buses pick up and drop off passengers only within the assigned zone. When the drop off is in another zone, the dispatcher chooses a meeting point at the zone boundary for passenger transfer or a central transfer is used. This system ensures that a vehicle will always be within each zone when rides are requested.
- **Flexibly Routed and Scheduled Services:** Flexibly routed and scheduled services have some characteristics of both fixed route and demand response services. In areas where demand for travel follows certain patterns routinely, but the demand for these patterns is not high enough to warrant a fixed route, service options such as checkpoint service, point deviation, route deviation, service routes, or subscription service might be the answer. These are all examples of flexible routing and schedules, and each may help the transit system make its demand response services more efficient while still maintaining much of the flexibility of demand responsiveness.
- **Microtransit:** A form of demand response service, open to the general public, that requires some type of "reservation," typically made via an app-based system. Typically, microtransit uses software algorithms to completely automate the scheduling of the trip, the fare collection (if any), and the route the driver will utilize (communicating with the driver via some type of mobile data terminals).

Deviated Fixed Route Service: Transit buses travel along a predetermined alignment or path with scheduled time points at each terminal point and in some instances at key intermediate locations. Route deviation service is different than conventional fixed route bus service in that the vehicle may leave the route upon requests of passengers to be picked up or returned to destinations near the route. Following an off-route deviation, the vehicle typically returns to the point at which it left the route. Passengers may call in advance for route deviation or may access the system at predetermined route stops. The limited geographic area within which the vehicle may travel off the route is known as the route deviation corridor.

Dial-A-Ride Service: A name that is commonly used for demand response service. It is helpful in marketing the service to the community, as the meaning of "dial-a-ride" may be more self-explanatory than "demand response" to someone unfamiliar with transportation terms.

Environmental Justice: Executive Order 12898, issued in 1994, requires agencies receiving federal funds to determine whether their programs, policies, and activities will have disproportionately high and adverse human health or environmental effects on minority or low-income populations.

Express Bus Service: Express bus service characteristics include direct service from a limited number of origins to a limited number of destinations with no intermediate stops. Typically, express bus service is fixed route/fixed schedule and is used for longer distance commuter trips. The term may also refer to a bus that makes a limited number of stops, while a local bus makes many stops along the same route but as a result takes much longer.

Farebox Recovery Ratio: The percentage of operating costs covered by revenue from fares and contract revenue (total fare revenue and total contract revenue divided by the total operating cost).

Fares: Revenue from cash, tickets, and pass receipts given by passengers as payment for public transit rides.

Federal Transit Administration (FTA): An operating administration within the United States Department of Transportation that administers federal programs and provides financial assistance to public transit.

Feeder Service: Local transportation service that provides passengers with connections to a longer-distance transportation service. Like connector service, feeder service is service in which a transfer to or from another transit system, such as an intercity bus route, is the focal point or primary destination.

Fixed Route: Transportation service operated over a set route or network of routes on a regular time schedule.

Headway: The length of time between vehicles moving in the same direction on a route. Headways are called short if the time between vehicles is short and long if the time between them is long. When headways are short, the service is said to be operating at a high frequency; if headways are long, service is operating at a low frequency.

Intercity Bus Service: Regularly scheduled bus service for the public that operates with limited stops over fixed routes connecting two or more urban areas not near, that has the capacity for transporting baggage carried by passengers, and that makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available. Intercity bus service may include local and regional feeder services, if those services are designed expressly to connect to the broader intercity bus network.

Interlined Routes: When fixed routes are routed through a transfer center or some other terminal location and become another route, with passengers typically allowed to ride through from one route to another without an additional fare and/or transfer fee. The “interline” is typically identified on public materials.

Operating Expenditures: The recurring costs of providing transit service (wages, salaries, fuel, oil, taxes, maintenance, insurance, marketing, etc.).

Operating Revenue: The total revenue earned by a transit agency through its transit operations. It includes passenger fares, advertising, and other revenues.

Paratransit Service: "Paratransit" means the transportation of passengers by motor vehicle or other means of conveyance by persons operating on a regular and continuing basis and the transportation or delivery of packages in conjunction with an operation having the transportation of passengers as its primary and predominant purpose and activity but excluding regular route transit. "Paratransit" includes transportation by carpool and commuter van, point deviation and route deviation services, shared-ride taxi service, dial-a-ride service, and other similar services.

Boardings per Mile or Hour: Productivity measure that takes the total boardings and divides by the miles and/or hours operated. The hours and/or miles may be presented as either total vehicle miles or hours or as revenue miles or hours.

Passenger Trip (Unlinked): Typically, one passenger trip is recorded any time a passenger boards a transportation vehicle or other conveyance used to provide transportation. “Unlinked” means that one trip is recorded each time a passenger boards a vehicle, no matter how many vehicles that passenger uses to travel from their origin to their destination.

Performance Indicator: An indicator is a metric that provides meaningful information about the condition or performance of the transportation system but is neither managed nor used to evaluate the effectiveness of policies, strategies, or investments.

Performance Measure: A performance measure is a metric that measures progress toward a goal, outcome, or objective. This definition covers metrics used to make decisions or evaluate the effectiveness or adequacy of a policy, strategy, or investment.

Performance Target: A target is a specific performance level representing the achievement of a goal, outcome, or objective.

Point Deviation Service: A type of flexible route transit service in which fixed scheduled stops (points) are established but the vehicle may follow any route needed to pick up individuals along the way if the vehicle can make it to the fixed points on schedule. This type of service usually provides access to a broader geographic area than does fixed route service but is not as flexible in scheduling options as demand response service. It is appropriate when riders change from day to day, but the same few destinations are consistently in demand. Also sometimes called checkpoint service.

Public Transportation: Transportation service that is available to any person upon payment of the fare either directly, subsidized by public policy, or through some contractual arrangement, and that cannot be reserved for the private or exclusive use of one individual or group. "Public" in this sense refers to the access to the service, not to the ownership of the system that provides the service.

Revenue Hours: The number of transit vehicle hours when passengers are being transported. Calculated by taking the total time when a vehicle is available to the public with the expectation of carrying passengers. Excludes deadhead hours, when buses are positioning but not carrying passengers, but includes recovery/layover time.

Revenue Miles: The number of transit vehicle miles when passengers are being transported. Calculated by taking the total mileage operated when a vehicle is available to the public with the expectation of carrying passengers. Excludes deadhead mileage, when buses are moving but not carrying passengers.

Ridership: The total of all unlinked passenger trips, including transfers. One trip that includes a transfer would be counted as two unlinked passenger trips.

Ridesharing: A form of transportation, other than public transit, in which more than one person shares the use of a vehicle, such as a van or car, to make a trip. Variations include carpools or vanpooling.

Section 5304 (State Transportation and Planning Program): The section of the Federal Transit Act of 1991, as amended, that provides financial assistance to the states for purposes of planning, technical studies and assistance, demonstrations, management training, and cooperative research activities.

Section 5307 (Urbanized Area Formula Program): The section of the Federal Transit Act of 1991, as amended, that authorizes grants to public transit systems in urban areas with populations of more than 50,000 for both capital and operating projects. Based on population and density figures, these funds are distributed directly to the transit agency from the FTA.

Section 5310 (Enhanced Mobility for Seniors and Persons with Disability): The section of the Federal Transit Act of 1991, as amended, that provides grant funds for the purchase of accessible vehicles and related support equipment for private non-profit organizations to serve elderly and/or people with disabilities, public bodies that coordinate services for elderly and

people with disabilities, or any public body that certifies to the state that non-profits in the area are not readily available to carry out the services.

Section 5311 (Non-urbanized Area Formula Program): The section of the Federal Transit Act of 1991, as amended, that authorizes grants to public transit systems in non-urbanized areas (fewer than 50,000 population). The funds initially go to the governor of each state.

Section 5339 (Bus and Bus Facilities): The section of the Federal Transit Act of 1991, as amended, that makes federal resources available to states and designated recipients to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities. Funding is provided through formula allocations and competitive grants. A sub-program provides competitive grants for bus and bus facility projects that support low and zero-emission vehicles.

Service Area: The geographic area that coincides with a transit system's legal operating limits (city limits, county boundary, etc.).

Service Gaps: When certain geographic segments cannot be covered by transportation services. This term can also refer to instances where service delivery is not available to a certain group of riders, or at a specific time.

Service Span: The duration of time that service is made available or operated during the service day (e.g., 6 AM to 10 PM on weekdays).

Spare Ratio: The percentage/number of vehicles that an operator purchases in excess of the number of vehicles required to provide the maximum level of service. The spares are required so that some vehicles may cycle through a preventive maintenance regimen while the full level of planned service can still be provided.

Standard: A recommendation that leads or directs a course of action to achieve a certain goal. A standard is the expected outcome for the measure that will allow a service to be evaluated. There are two sets of transit standards.

- **Service design and operating standards:** Guidelines for the design of new and improved services and the operation of the transit system.
- **Service performance standards:** The evaluation of the performance of the existing transit system and of alternative service improvements using performance measures.

State Contract Assistance: The program through which the RTAs receive state operating funding for transit at the discretion of the Massachusetts Legislature via the state budget process annually. The total amount of state contract assistance funding provided in the state budget is allocated to the RTAs via a formula developed with RTA input.

Through Routes: When fixed routes are routed through a transfer center or some other terminal location and become another route, but – unlike interlining – passengers are not typically allowed to ride through from one route to another, as a “through-route” is typically only visible/presented on the operating schedule for bus operators and is not identified on public materials.

Title VI: Title VI of the Civil Rights Act of 1964 requires that “No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.”

Transportation Network Companies: Private sector companies that provide software routing, scheduling, and payment services to independent contractor drivers for a fee; these drivers then

utilize their own vehicles to provide a (typically) curb-to-curb transportation service, sometimes to sole riders and sometimes to pooled groups.

Total Operating Cost: The total of all operating costs incurred during the transit system calendar year, excluding expenses associated with capital grants.

Transfer: Passengers arrive on one bus and leave on another (totally separate) bus to continue their trip. The boarding of the second vehicle is counted as an unlinked passenger trip.

Transit Dependent: A description for a population or person who does not have immediate access to a private vehicle, or because of age or health reasons cannot drive and must rely on others for transportation.

Transit Subsidy: The operating costs not covered by revenue from fares or contracts.

Trip Denial: Occurs when a trip is requested by a passenger, but the transportation provider cannot provide the service. Trip denial may happen because capacity is not available at the requested time. For ADA paratransit, a capacity denial is specifically defined as occurring if a trip cannot be accommodated within the negotiated pick-up window. Even if a trip is provided, if it is scheduled outside the +60/-60-minute window, it is considered a denial. If the passenger refused to accept a trip offered within the +60/-60-minute pick-up window, it is considered a refusal, not a capacity denial.

Volunteers: Persons who offer services to others but do not accept monetary or material compensation for the services that they provide. In some volunteer programs, the volunteers are reimbursed for their out-of-pocket expenses; for example, volunteers who drive their own cars may receive reimbursement based on miles driven for the expenses that they are assumed to have incurred, such as gasoline, repair, and insurance expenses.

1. Executive Summary

This 5-year Comprehensive Regional Transit Plan (CRTP) update builds on the work of the Cape Ann Transportation Authority (CATA) 2015 Regional Transit Plan (RTP). This update was recommended by the Task Force on Regional Transit Authority Performance and Funding in its final report issued in April 2019. The report included 24 recommendations in 5 categories:

- Investment and Performance
- Accountability
- Service Decisions
- Quality of Service
- Environmental Sustainability

The CRTP update recommendation (No. 7) was included in the service decisions grouping. Specifically, recommendation 7 advised that “RTAs will continue to succeed by understanding their markets and by aiming to have their service networks meet the current and future mobility needs of their region as well as support connectivity to other regions where possible. This effort will be guided by (1) the completion or updating of Comprehensive Regional Transit Plans (CRTPs) every five years...”

Following publication of the Task Force Report, a commitment to complete the CRTP update was included in CATA’s 2-year Memorandum of Understanding (MOU) with the Massachusetts Department of Transportation (MassDOT) executed on August 14, 2019.

The primary goals of this CRTP are to (1) provide an agency and service overview including fare structure; (2) identify essential markets, gaps in service, and ridership growth opportunities given demographic, socioeconomic, and employment data and the impacts of the novel coronavirus (COVID-19) pandemic; (3) evaluate the results of performance indicators and assess performance monitoring systems; and (4) provide recommendations for a strategic 5-year vision that will prioritize the development and implementation of a decision-making framework driven by data analysis and focused on performance.

The CATA CRTP update started in December 2019 but took a profound and unexpected turn mid-way through the project. Following the kick-off meeting in January 2020, the process proceeded with data collection, goal development, and planning for community and rider engagement. However, by the middle of March 2020, when the engagement activities were scheduled to commence, the world experienced a historic pause due to the COVID-19 pandemic.

In response to the pandemic, on March 10, 2020, Governor Baker declared a state of emergency and subsequently issued a stay-at-home order on March 23, 2020, closing all non-essential businesses. These safety measures, issued in the face of an unprecedented threat to public health, had serious, sweeping impacts, including on the development of this plan and transit operations writ large. CATA, along with the other RTAs, reduced service levels, encouraging non-essential riders to temporarily discontinue travel.

While CATA continues its return to normal service in accordance with public health guidelines, ridership is still depressed due to distance learning, business closures, telework, furloughs,

“This schedule adjustment is due to changes in customer travel patterns and to provide more consistent service on routes for additional social distancing opportunities. Please continue to use CATA only for essential trips, such as medical, grocery, pharmacy, and work.”
– CATA website, April 27, 2020

layoffs, and reluctance to use public transportation. In response to the continued ridership volatility, CATA acknowledges the unpredictability over the coming months and years and used this CRTP to develop recommendations on methods to adapt quickly to a changing transit market.

1.1 Overview of CATA Services

CATA is headquartered in Gloucester, Massachusetts, and is one of the 15 regional transit authorities (RTAs) that, along with the Massachusetts Bay Transportation Authority (MBTA), operate public transportation in the Commonwealth. CATA provides fixed route and demand response services to communities in Essex County, including Gloucester, Rockport, Ipswich, Essex, and Hamilton.

CATA serves an area with a highly seasonal population fluctuation, increasing during warm weather months as demand for transportation to the beaches increases. Its year-round fixed route service runs in Gloucester, Rockport, and Beverly. The MBTA Commuter Rail station in Gloucester connects CATA riders to commuter rail, providing a two-seat journey into Boston and other points south. On weekends, CATA provides service to shopping centers in Danvers and Peabody.

During the summer months, CATA operates three seasonal services:

- A fixed route service to the Ipswich Commuter Rail station. The service takes people to recreational and commercial destinations in Essex and Ipswich, including Crane Beach.
- The Stage Fort Park Shuttle, a fixed route service that connects Stage Fort Park to the island. Stage Fort Park has ample parking and visitors are encouraged to park there and take the shuttle to alleviate traffic congestion.
- The Rockport Loop, a short fixed route service that provides service between the Rockport park and ride and downtown Rockport, connecting to the Rockport Commuter Rail Station and alleviating traffic and parking congestion.

CATA also provides two year-round demand response services. The first, Dial-A-Ride, is available to all residents in the CATA service area who are age 60 or over. The second, Americans with Disabilities Act (ADA) Paratransit, is available only for qualifying individuals.

The six primary routes and ADA Van Service operated by CATA provide service on weekdays and Saturdays. Dial-A-Ride service is only offered on weekdays.

1.2 Planning Process

The impacts and limitations imposed by the COVID-19 pandemic required flexibility in the approach for developing this 5-year plan. While some elements of the original process developed pre-pandemic remained viable, many had to be adapted to respond to the new realities of COVID-19. From public outreach to fare policy analysis to the structure of the recommendations, this planning process incorporates considerations relating to uncertainty around how the future might unfold.

1.2.1 Review of Transit Services and Market Conditions

A review of service from the last 5 years and market demand analysis were conducted to identify gaps and needs in CATA's service area. The analysis indicated that CATA's ridership grew more than 10 percent between Fiscal Year (FY) 2015 and FY 2019 and that the Authority serves the parts of its service area where demographic data show the highest potential demand. However, safety measures like remote learning and teleworking, along with furloughs and layoffs, greatly disrupted CATA's ridership patterns, making it difficult to infer future transit

demand from past performance. This planning process brought to light the importance of harnessing new technology to conduct ongoing analysis of real-time data rather than focusing primarily on historical trends.

1.2.2 Scenario Planning

The project team used scenario planning exercises to imagine what the next 5 years might hold in terms of ridership and market demand. Two months after the state of emergency was issued, CATA leadership participated in an hour-long workshop with the consultant team centered around establishing key uncertainties in the face of the COVID-19 pandemic. Subsequent to that workshop, a high-ridership scenario (a return to 86 percent of pre-pandemic ridership), medium-ridership scenario (between 60 and 85 percent of pre-pandemic ridership), and low-ridership scenario (below 60 percent of pre-pandemic ridership) were developed to inform the development of needs and recommendations. These scenarios formed the framework for the recommendations in this plan.

1.2.3 Public Outreach

Due to social distancing guidelines and other safety protocols resulting from the COVID-19 pandemic, no in-person outreach could be conducted. While the bulk of the outreach for this CRTP was undertaken through an online stakeholder outreach survey conducted in early summer 2020, CATA also collected input from the Authority's board members at their February 2020 meeting.

One hundred and seventeen survey responses were collected using the online survey. The findings are not a statistically valid sample of CATA riders or the region's residents due to the inability to conduct in-person outreach. They should be used as a guide in the context of other public outreach and data analysis. Nonetheless, key takeaways that correlate with other planning efforts include:

- Rider respondents would like CATA to offer more connections outside of Cape Ann.
- Riders and non-riders alike put great value on the availability of public transportation service on Cape Ann.
- Non-riders would be more inclined to use CATA if the service was easier to understand and there was more frequent service. Some also see themselves relying on CATA in later years when they can no longer drive themselves.
- Fare zones in particular are seen as confusing and unfair to Rockport residents.

"I use the bus when car is in repair and as I get older and feeling not safe to drive, I am sure I use it regularly to go shopping and doctor, chiropractor, dentist appointments" – 2020 Rider Survey Comment

1.3 Core Needs and Recommendations

CATA identified 22 recommendations to include in this plan. Table 1 lists core recommendations that CATA will pursue in the next 5 years, regardless of ridership levels. The full list can be found in Chapter 9.

Table 1. Core Recommendations**Recommendation**

Use a performance-driven framework to establish appropriate service levels to specific transit markets and on specific routes.

Pursue funding opportunities to expand medical transportation, in particular in Danvers and Beverly.

Reconfigure the Business Express Loop to increase access to Market Basket and expand frequency, including for residents of Rockport.

Work with the automatic vehicle locator (AVL) vendor to explore opportunities for real-time bus tracker capabilities.

Review current route configurations to ensure ease of transferring from one route to another.

Simplify service information for first-time or seasonal users (e.g., simplified schedules).

Develop a communications strategy that includes creation of a social media presence, visual communications through posters and installation of dynamic screens on board buses, as well as frequent interaction with local media.

Eliminate the fare zone structure currently in place.

Coordinate with MBTA on any upcoming service changes as a result of the pandemic, economic recession, or any other reason.

Pursue funding opportunities to meet Commonwealth-wide environmental goals.

Coordinate with other RTAs for opportunities for joint procurement of technology to support data-driven decision making or other organizational goals.

Coordinate with other RTAs for the hiring of a data analyst serving multiple RTAs.

With the launch of the new CATA website, include a performance dashboard that is updated at least quarterly showing route-by-route metrics in addition to systemwide and modal performance data.

Develop a strategy for bus stop improvements that includes a prioritization plan.

Explore platforms for online and mobile paratransit booking, Where's My Ride tracking capabilities, and mobile fare payment.

Continue coordinating with MBTA on its fare transition plan. Develop a timeline for making decisions about CATA's fare policy given ongoing uncertainty of the MBTA timeline.

Confer with other RTAs who have transitioned to an account-based fare payment system or other cash-free system.

2. Background and 2020 Context

The 15 RTAs¹ provide vital mobility options and lifeline services to the millions of people across the Commonwealth outside of the Greater Boston region. The 2020 CRTP update process for the RTAs, funded by the Massachusetts Department of Transportation (MassDOT), came out of Commonwealth-wide initiatives in 2018 and 2019, which prompted this plan update, most of which were last developed in 2015. The CRTPs are both a result of and a contributor to the ongoing discussions on regional transportation. Recent and ongoing initiatives include the following:

- Governor's Commission on the Future of Transportation²
- A Vision for the Future of Massachusetts' Regional Transit Authorities³ (RTA Task Force)
- Transportation & Climate Initiative⁴
- MBTA Fare Transformation⁵

The RTA Task Force Final Report⁶ Recommendation No. 7 was a primary driver for the development of this CRTP. The CRTP update is carried out as a commitment to CATA's 2-year MOU with MassDOT signed in August 2019. In addition to the CRTP, the MOU also contained commitments on performance metrics and targets, maintaining an up-to-date asset inventory, submitting a fare policy by December 2020, submitting a balanced budget annually, and reporting timelines. The CATA MOU is discussed in more detail in Chapter 6.

The CATA CRTP update process started in December 2019 but took a profound and unexpected turn mid-way through the project. Following the kick-off meeting in January 2020, the process proceeded with data collection, goal development, and planning for community and rider engagement. However, by the middle of March 2020, when the engagement activities were scheduled to commence, the world experienced a historic pause due to the COVID-19 pandemic.

In response to the pandemic, on March 10, 2020, Governor Baker declared a state of emergency and subsequently issued a stay-at-home order on March 23. The stay-at-home order, originally intended for 2 weeks, ended up lasting until May 18, 2020. As of the finalization of this plan in early 2021, the pandemic continues to disrupt services and negatively impact transit ridership. Given the unprecedented nature of this disruption and unknown long-term economic, social, and public health implications, the next few years will likely see continued widespread societal change. Therefore, transit agencies especially will need to continue to build a data-driven and performance-focused decision-making framework to respond to these uncertain demographic and industry trends.

This chapter provides background and current context around the CRTP update process for all RTAs. CATA-specific contextual information is included in Sections 2.2 and 2.3.

¹ Commonwealth of Massachusetts, "General Laws Chapter 161B: Transportation Facilities, Highway Systems, and Urban Development Plans," <https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXXII/Chapter161B>.

² Commission on the Future of Transportation, *Choices for Stewardship: Recommendations to Meet the Transportation Future*, 2018, <https://www.mass.gov/orgs/commission-on-the-future-of-transportation>.

³ Task Force on Regional Transit Authority Performance and Funding, *A Vision for the Future of Massachusetts' Regional Transit Authorities*, April 2019, https://malegislature.gov/Reports/7917/SD2385_RTAtaskforceReport.pdf.

⁴ Transportation and Climate Initiative, accessed 2020, <https://www.transportationandclimate.org/>.

⁵ Massachusetts Bay Transportation Authority, accessed 2020, <https://www.mbta.com/projects/fare-transformation>.

⁶ Task Force on Regional Transit Authority Performance and Funding, *A Vision for the Future of Massachusetts' Regional Transit Authorities*, April 2019, https://malegislature.gov/Reports/7917/SD2385_RTAtaskforceReport.pdf.

2.1 Background

Commonwealth-wide initiatives, organized generally around the themes of climate change, new technology, and providing affordable and convenient transportation options for all people, set the stage for the CRTP update process. The RTAs play an important role in getting people across the diverse regions of the Commonwealth to work, to school, and to essential services. Because of this role, the RTAs are pivotal in improving the public's mobility options as explored through the Commonwealth-wide initiatives described in this section.

2.1.1 Governor's Commission on the Future of Transportation

Established by Executive Order in January 2018, the Governor's Commission on the Future of Transportation (the Commission) was convened to explore the following topics across the Commonwealth and their impact on transportation between 2020 and 2040:

- Climate and Resiliency
- Transportation Electrification
- Autonomous and Connected Vehicles
- Transit and Mobility Services
- Land Use and Demographics

The Commission completed its work and released findings in December 2018 in a report entitled *Choices for Stewardship: Recommendations to Meet the Transportation Future*.⁷ Findings from the report included:

- The Commonwealth is expected to grow by 600,000 residents by 2040 and job growth is also expected to continue.
- Commonwealth residents are on average older than in many other US states, and older adults are expected to comprise a larger portion of the population in the future.
- As with the national trend, transit ridership has been declining in recent years.
- Use of transportation network companies has increased dramatically in recent years.
- Connected and autonomous vehicles are expected to radically change transportation and mobility in the future.
- The impacts of climate change are happening sooner and more intensely than originally projected with significant implications by 2040.
- Transportation in the Commonwealth accounts for 40 percent of all greenhouse gas (GHG) emissions.
- Electric vehicles could be part of the solution to reducing transportation emissions but would require significant infrastructure to implement.

The Commission used a scenario planning approach to itemize recommendations to prepare the Commonwealth's transportation system for the future. While many trends were evaluated for use in the scenario planning exercise, technology adoption as well as jobs and housing distribution were chosen as the two major trends that will most likely shape people's mobility options and needs. Based on the scenario planning trend analysis, the Commission then identified key challenges facing the Commonwealth's transportation system and developed recommendations across five categories to prioritize improvements over the next 20 years:

⁷ Commission on the Future of Transportation, *Choices for Stewardship: Recommendations to Meet the Transportation Future*, 2018, <https://www.mass.gov/orgs/commission-on-the-future-of-transportation>.

- Modernize existing state and municipal transit and transportation assets to more effectively and sustainably move more people throughout a growing Commonwealth.
- Create a 21st century “mobility infrastructure” that will prepare the Commonwealth and its municipalities to capitalize on emerging changes in transportation technology and behavior.
- Substantially reduce GHG emissions from the transportation sector in order to meet the Commonwealth’s Global Warming Solutions Act (GWSA) commitments, while also accelerating efforts to make transportation infrastructure resilient to a changing climate.
- Coordinate and modernize land use, economic development, housing, and transportation policies and investment in order to support resilient and dynamic regions and communities throughout the Commonwealth.
- Make changes to current transportation governance and financial structures in order to better position Massachusetts for the transportation system that it needs in the coming years and decades.

Within these 5 categories are a total of 18 recommendations on how to best prepare the Commonwealth’s transportation network for challenges and opportunities through 2040. The recommendations will guide Commonwealth-wide systems, specific solutions, and transportation investments, and will have a profound impact on the RTAs over the next 20 years.

2.1.2 A Vision for the Future of Massachusetts’ Regional Transit Authorities

Resulting from the Governor’s Commission on the Future of Transportation initiative and directed by Outside Section 72 of the FY 2019 Massachusetts State Budget,⁸ a Task Force on Regional Transit Authority Performance and Funding was established in the fall of 2018. The Task Force issued a final report entitled *A Vision for the Future of Massachusetts’ Regional Transit Authorities: Report of the Task Force on Regional Transit Authority Performance and Funding* in April 2019.⁹

The report built on the first recommendation from the Commission, “Prioritize investment in public transit as the foundation of a robust, reliable, clean, and efficient transportation system.” It set forth a path to stabilize, modernize, and improve the RTAs through five categories of action: Investment and Performance, Accountability, Service Decisions, Quality of Service, and Environmental Sustainability.

From those five categories, several goals related to the CRTP emerged:

- Sign a mutually negotiated MOU with MassDOT on a plan for performance monitoring and development of performance targets.
- Complete the CRTP and update every 5 years.
- Identify and evaluate demonstrated community need for evening and 7-day service.
- Identify and evaluate appropriate transit services and potential partnerships based on level of demand and efficiency.
- Develop pilot programs for innovative delivery models.
- Increase regional collaboration, including cross-RTA services.
- Collaborate with municipalities to provide safe walking and bicycle access to transit and comfortable, safe bus stops.

⁸ Commonwealth of Massachusetts, “Budget Summary FY2019,” https://budget.digital.mass.gov/bb/gaa/fy2019/os_19/houtexp.htm.

⁹ Task Force on Regional Transit Authority Performance and Funding, *A Vision for the Future of Massachusetts’ Regional Transit Authorities*, April 2019, https://malegislature.gov/Reports/7917/SD2385_RTAtaskforceReport.pdf.

- Conduct a fare equity analysis every 3 years.
- Collaborate with the MBTA Fare Transformation process and adopt the proposed system.
- Participate in the Massachusetts Environmental Policy Act process.
- Maximize multimodal connectivity.
- Maintain an easily accessible website and robust social media presence.
- Collaborate with MassDOT and MBTA to integrate information services.
- Employ intentional outreach strategies.
- Purchase all zero-emission public buses by 2035.

Many of these goals are addressed and/or discussed as part of this CRTP update.

2.1.3 Transportation & Climate Initiative

Massachusetts is a participating state in the Transportation & Climate Initiative of the Northeast and Mid-Atlantic States:

The Transportation and Climate Initiative (TCI) is a regional collaboration of Northeastern states and Mid-Atlantic states and the District of Columbia that seeks to improve transportation, develop the clean energy economy, and reduce carbon emissions from the transportation sector. The participating states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia, as well as the District of Columbia.

The initiative builds on the region's strong leadership and commitment to energy efficiency and clean energy issues, and its programs to reduce carbon emissions in the power sector, which have resulted in the region becoming one of the most energy efficient areas in the nation. At the same time, the effort underscores the sense of urgency shared by all 12 jurisdictions, and their collective aspirations to become the leading region for sustainability and clean energy deployment in the country.

While the COVID-19 pandemic temporarily reduced congestion and associated pollution in the short-term, it has likely altered commuting patterns and housing choice in the long-term, which has environmental and sustainability implications. As such, the need to reduce carbon emissions from the transportation sector is just as important as it was before the COVID-19 pandemic. Additionally, the COVID-19 pandemic highlighted racial disparities in exposure to air pollution and disproportionate impacts of threats to public health. To that end, the TCI jurisdictions are collaborating to develop a low-carbon transportation program that advances equity.

The TCI jurisdictions are collaborating to develop a regional agreement to cap pollution from transportation fuels and invest in solutions that result in reduced emissions, cleaner transportation, healthier communities, and more resilient infrastructure. Massachusetts TCI participation will likely impact the RTAs in several ways, including vehicles, infrastructure, technology, and funding.

In December 2020, Massachusetts joined with Connecticut, Rhode Island, and the District of Columbia to be the first jurisdictions to launch a multi-state program to reduce pollution and invest \$300 million per year in cleaner transportation choices and healthier communities.¹⁰.

¹⁰ Transportation and Climate Initiative, "Massachusetts, Connecticut, Rhode Island, D.C. are First to Launch Groundbreaking Program to Cut Transportation Pollution, Invest in Communities," December 2020, <https://www.transportationandclimate.org/final-mou-122020>.

2.1.4 MBTA Fare Transformation

CATA's service area contains several MBTA commuter rail stations and the Authority uses the MBTA's Scheidt & Bachmann CharlieCard/CharlieTicket fare media. CATA will be directly impacted by MBTA's efforts to modernize their fare payment system ("Fare Transformation") using mobile fare payment platforms and other new technologies. One of the key goals of fare transformation is reducing the use of cash on-board transit vehicles (which is also an interest of CATA, as discussed in Section 4.6).

2.2 2020 Context

The year 2020 unfolded in a radically different manner than was anticipated. Because of the COVID-19 pandemic and the as-yet-unknown ways that the pandemic and its aftermath will permanently alter how, when, and where people travel, the CRTP update process had to be flexible and RTAs will need to be nimble, data-driven, and performance-focused in responding to an uncertain future. To that end, it will be critical for CATA to continue building a data-driven and performance-focused decision-making and management framework to lean into and respond to the rapid changes that are expected to continue to impact the future of the transit industry. This data-driven and performance-focused approach will position CATA for continued success.

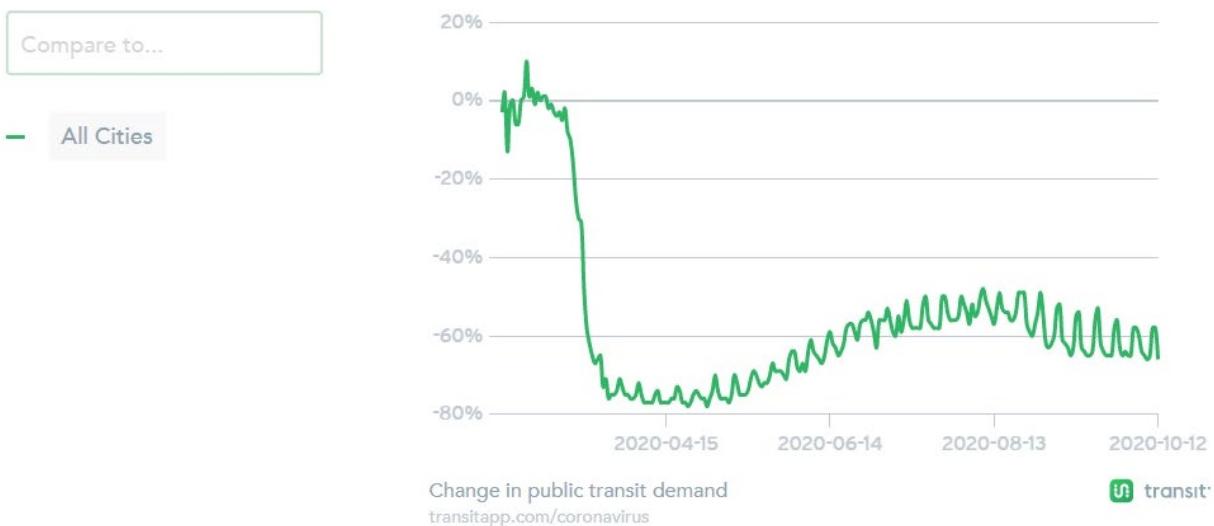
2.2.1 COVID-19 Pandemic

Impacts to the transit industry from the COVID-19 pandemic included the following:

- Reduction of service due to diminished driver availability, social distancing requirements and associated capacity constraints on transit vehicles, and reduced demand
- Loss of ridership due to business closures/disruptions, remote working and learning, increased popularity of online shopping and telemedicine due to safety concerns, and stay-at-home orders and advisories that have depressed demand for discretionary student, and work trips
- Temporary suspension of fare collection or fare collection enforcement along with rear-door boarding
- Implementation of employee protection measures, such as plexiglass shields and distribution of personal protective equipment (PPE)
- New rigorous public space cleaning protocols and the removal of seats and tables from transit facilities to discourage congregation

As a result of these impacts, ridership on systems across the country initially declined by up to 80 percent and has been rebounding slowly (Figure 1).

Figure 1. Change in Transit Demand (April 15, 2020–October 12, 2020)



In the early months of the pandemic CATA, like transit agencies nationwide, experienced a dramatic drop in ridership – CATA's April 2020 ridership saw a decline of 75 percent from the previous year. CATA adjusted service in response, making the following modifications:

- Switched to modified Saturday schedule for weekday service and improved frequencies on some routes to facilitate social distancing
- Reduced service to and from commuter rail due to lack of demand
- Canceled summer shuttles
- Suspended service to Danvers and Peabody (Mall Shuttle)
- Increased service to Magnolia and West Gloucester

On top of working quickly to adjust service levels, CATA also implemented the following safety measures as a result of the COVID-19 pandemic:

- All customers were encouraged to wear a mask or face covering.
- Fare collection enforcement was suspended.
- Vehicles were cleaned and disinfected each evening and drivers disinfected the buses throughout the day.

By the fall of 2020, CATA's ridership had rebounded slightly, with a 40 percent decline in August 2020 ridership relative to August 2019. CATA had returned service to nearly pre-pandemic levels, including resuming fare collection. The following service changes were in place as of October 2020:

- Service from Rockport to Gloucester via Eastern Avenue (Green Line), to Lanesville (Blue Line), and Rockport to Gloucester via Thatcher Road (Red Line) has increased.
- Service to Danvers and Peabody (Mall Shuttle) remains suspended.

Additionally, CATA has enacted the following policies to meet state guidelines and maintain a safe environment for customers and drivers:

- All customers are required to wear a mask or face covering.
- Vehicles are cleaned and disinfected daily.

2.2.2 Federal Coronavirus Aid, Relief, and Economic Security (CARES) Act

CATA has been able to continue to mitigate the financial impacts of the pandemic through funding from the federal Coronavirus Aid, Relief, and Economic Security (CARES) Act. The CARES Act has provided operating and capital funds for public transportation to mitigate lost revenue due to severe ridership decline, the suspension of fare collection, the implementation of cleaning and protection protocols, etc. The funding has been provided through the Federal Transit Administration (FTA) Section 5307 (urbanized area) and Section 5311 (rural areas) programs. For the RTAs, a total of \$213.4 million was apportioned through the CARES Act with \$1,587,875 provided to CATA.

2.3 Plan Considerations

Given all the previous work that led to the development of the CRTP and the unprecedented, transformational conditions during which the CRTP was developed, the CRTP update process necessarily evolved through 2020. Considerations included the following:

- The 5-year period prior to the 2020 pandemic year, FY 2015 to FY 2019, was considered for recent historical trend analysis to understand how the systems were operating prior to the pandemic and to provide a baseline for understanding the market for transit service in each community.
- Rider, community, public, and stakeholder outreach was primarily conducted online. As with all transit planning processes, outreach is one component of many that go into the identification of needs, solutions, and recommendations.

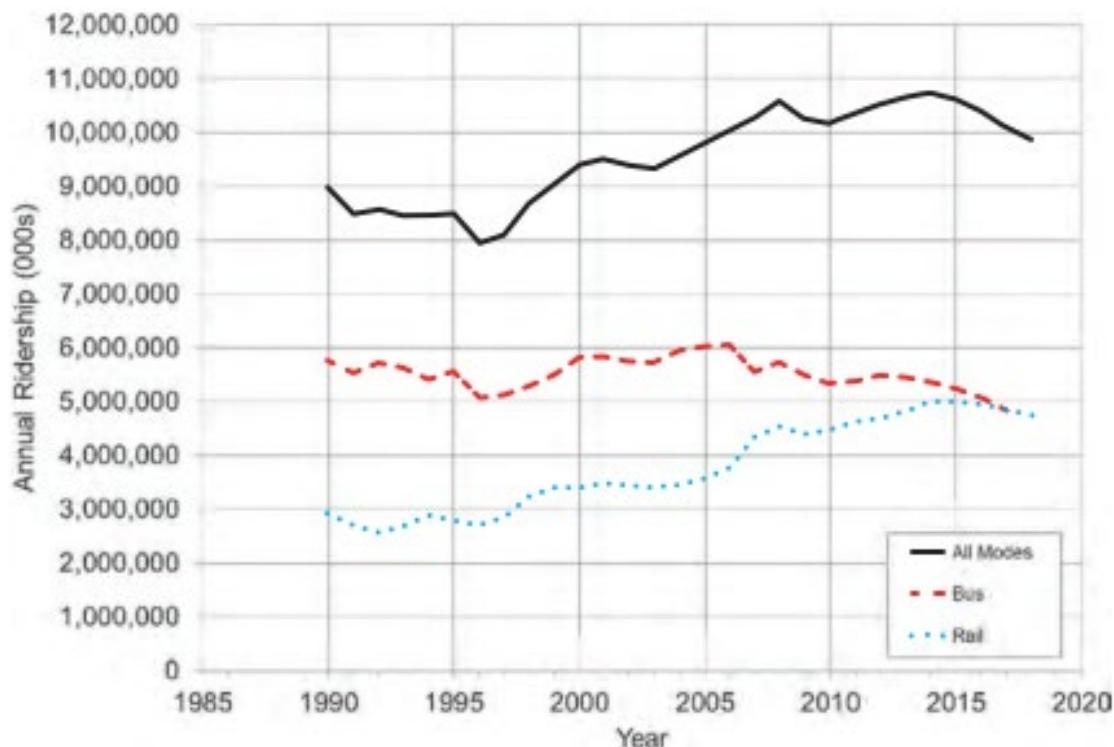
2.3.1 Transit Demand and Economic Uncertainties

Notwithstanding COVID-19 pandemic-related disruptions, for many years, transit ridership has been stagnant or declining nationally (Figure 2).¹¹ This trend has accelerated in the past few years, with most systems – and bus transit in particular – experiencing steady declines in ridership, despite a historically good economy. CATA has managed to increase ridership in recent years, due in part to operating shuttle buses for MBTA customers when commuter rail service is shut down for maintenance. The American Public Transportation Association (APTA) attributes the decline to four broad categories: erosion of time competitiveness, reduced affinity, erosion of cost competitiveness, and external factors.¹²

The erosion of time competitiveness is related to increasing traffic congestion and competing uses of street and curb space. Reduction in affinity refers to more competition for customer loyalty and the erosion of cost competitiveness has to do with increasing costs without a corresponding increase in demand for the service. And, finally, external factors are both the most challenging to define and to mitigate and include such things as policy changes that could improve transit usage but are too far-reaching for a transit agency alone to tackle.

¹¹ National Academy of Science, Transportation Research Board, Transportation Cooperative Research Program, "TCRP Research Report 209: Analysis of Recent Public Transit Ridership Trends," <http://www.trb.org/TCRP/Blurbs/179912.aspx>.

¹² American Public Transportation Association (APTA), "Understanding Recent Ridership Changes," <https://www.apta.com/research-technical-resources/research-reports/understanding-recent-ridership-changes/>.

Figure 2. National Change in Annual Ridership by Year for Bus, Rail, and All Modes (1985–2020)

Source: TCRP Research Report 209, *Analysis of Recent Public Transit Ridership Trends*

It is uncertain whether the pre-pandemic downward trends in transit ridership in recent years combined with the pandemic's negative impact on transit ridership will become a longer term pattern that will continue to depress transit usage. Pandemic trends potentially most impactful to CATA include the increase in remote work and distance learning. Those trends could significantly impact the workforce and student ridership markets for commuter and express services as well as local routes that serve colleges and universities.

For all transit systems, including CATA, public concern about the health impacts of shared ride services will remain a challenge. While CATA has instituted facial covering requirements, cleaning protocols, social distancing, and other mitigation measures, systems will also have to continue to reassure riders about the public health and safety of their services. To monitor and lean into these trends and position the Authority for success, it will be critical for CATA to use data tools to routinely analyze key system performance metrics and make service and financial decisions within the context of a performance-focused framework.

3. Agency Overview

Each of the Commonwealth's 15 RTAs operates in a unique context serving different geographic regions and mixes of urban, suburban, and rural communities and providing service tailored to the needs of their riders. This chapter provides an overview of CATA that establishes context for the findings contained in this CRTP.

3.1 Transit Agency Background

Established in 1974, CATA provides public transportation services to portions of Essex County, including the municipalities of Gloucester, Rockport, Ipswich, Essex, and Hamilton. CATA carries over 235,000 passengers, traveling approximately 350,000 miles and 26,000 hours with an operating budget of nearly \$2.9 million (Table 2).

Table 2. Statistics by Service (FY 2019)

FY 2019 Data	Fixed Route	% of Total	Demand Response	% of Total	Total
Ridership	206,000	87.5%	29,371	12.5%	235,371
Revenue Miles	218,072	62.4%	131,633	37.6%	349,705
Revenue Hours	15,413	59.4%	10,513	40.6%	25,926

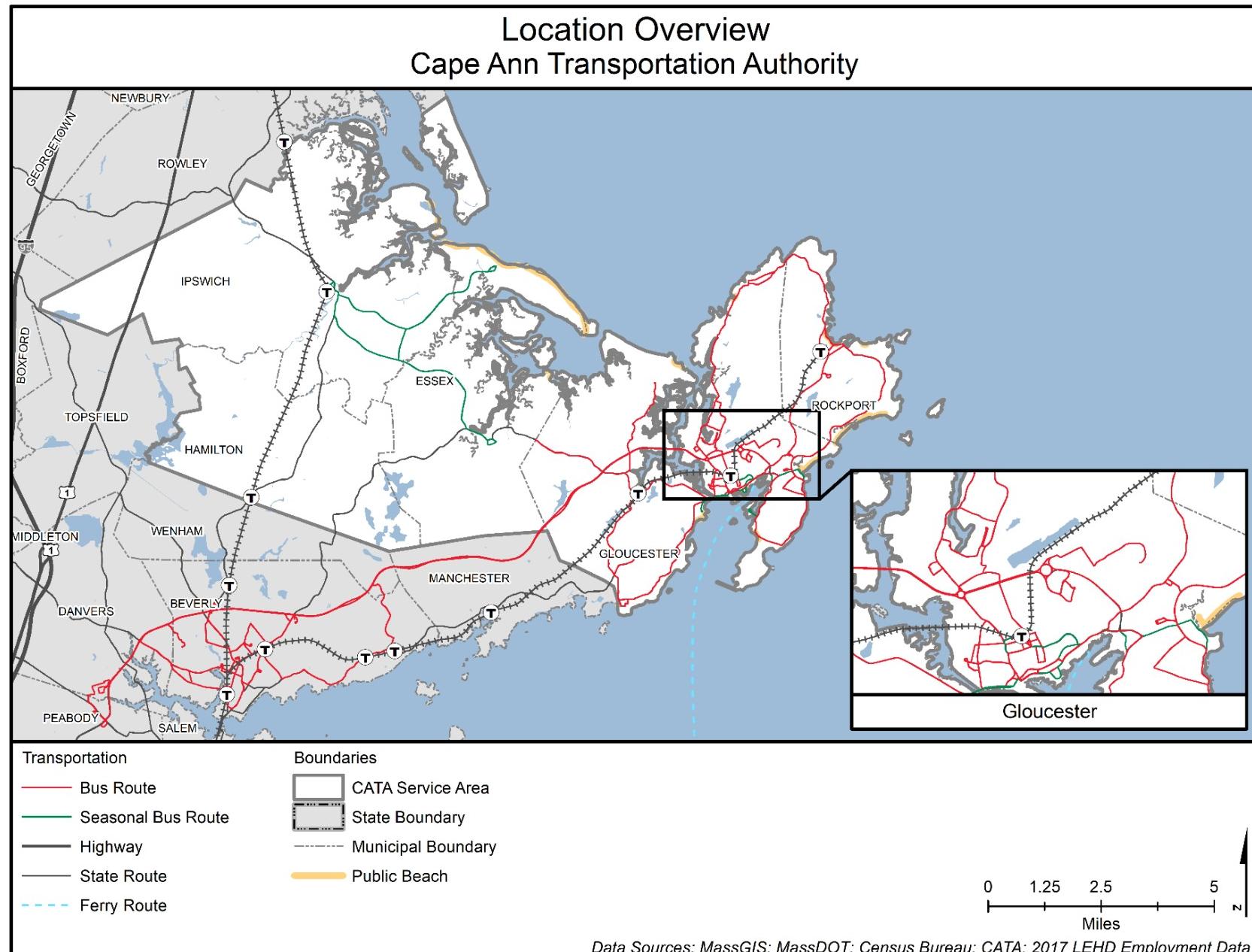
Source: CATA

CATA serves an area with a highly seasonal population fluctuation, increasing during warm weather months as demand for transportation to the beaches increases. The fluctuations in ridership by month, with summer peak visible, is displayed in Figure 9. It provides fixed route services and two demand response services (Figure 3). Its year-round fixed route service runs in Beverly, Gloucester, and Rockport. The MBTA Commuter Rail station in Gloucester connects riders to commuter rail, providing a two-seat journey into Boston and other points south. On weekends, CATA provides service to shopping centers in Danvers and Peabody.

During the summer months, CATA offers three seasonal services, including a fixed route that connects the Ipswich Commuter Rail station to recreational and commercial destinations in Essex and Ipswich, including Crane Beach; the Stage Fort Park Shuttle, a fixed route service that connects Stage Fort Park to the island; and the Rockport Loop, a short fixed route service that serves downtown Rockport and provides a connection with the Rockport Commuter Rail station.

CATA also provides two year-round demand response services. The first, Dial-A-Ride, is available to all residents in the CATA service area who are age 60 or over. The second, ADA Paratransit, is available in Rockport and Gloucester for qualifying individuals only. These services make up 12.5 percent of CATA's ridership. While not included in this analysis, CATA also serves as a Human Services Transportation (HST) brokerage. This brokerage acts as a connector between clients of agencies (e.g., MassHealth) and door-to-door transportation services.

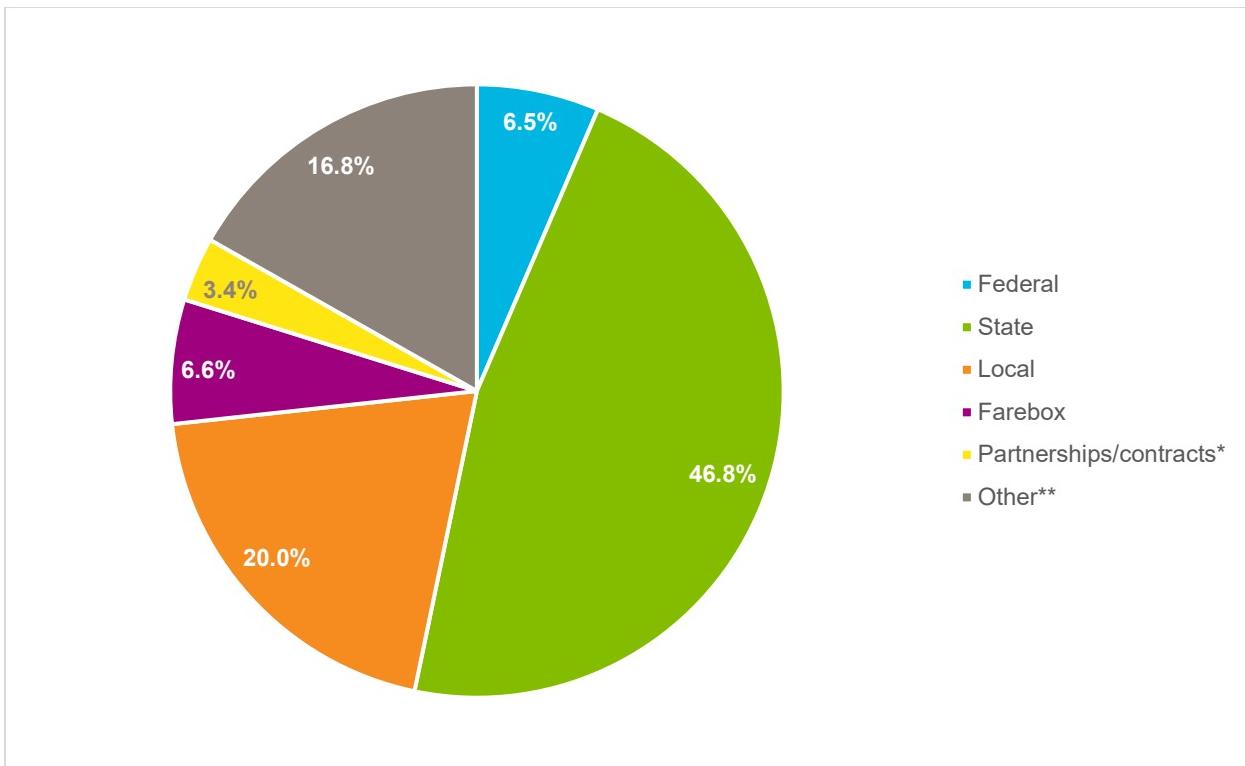
CATA's year-round fixed route services typically start early each morning and finish in the evening. Weekend service is limited to select routes and runs only on Saturdays. The seasonal fixed route service operates every Saturday, Sunday, and holiday from mid-June through Labor Day. Most of the services run by CATA have a frequency of 60 minutes or longer. The seasonal fixed route runs approximately every 40 to 60 minutes, though frequency is sometimes increased for optimal beach days.

Figure 3. System Map

Source: CATA

Operating subsidies are provided from the Commonwealth (46.8 percent), service assessments from towns in the service area (20.0 percent), and the federal government (6.5 percent). CATA also receives funding from services provided to the Department of Developmental Services (DDS), Division of Medical Assistance (DMA), the operation of MBTA Commuter Rail shuttles, and a shuttle service in Beverly, which is funded by the City of Beverly with assistance from MBTA. In addition to providing specialized transit service to state and local entities, CATA receives revenue from advertising, park and ride facilities, and rental income (Figure 4).

Figure 4. Operating Funding Sources (FY 2019)



Source: CATA

* Beverly shuttle service.

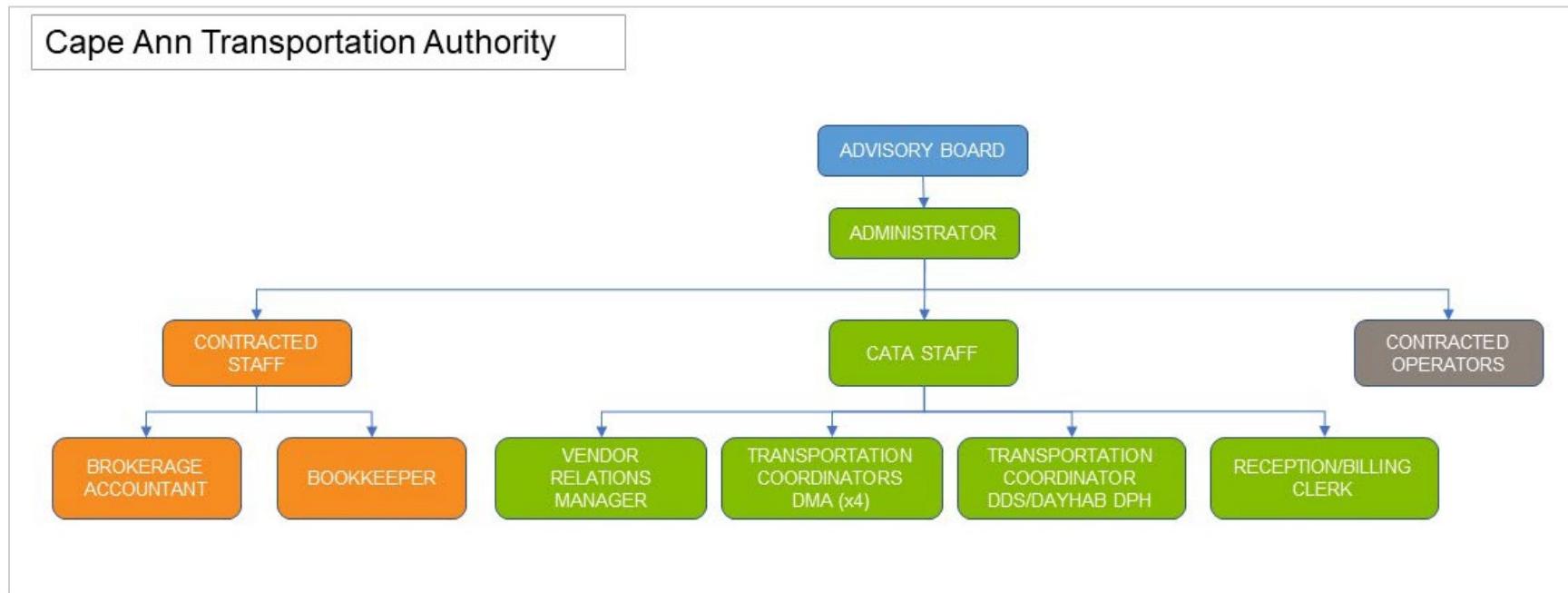
**Includes services provided to DDS, DMA, MBTA shuttles; advertising revenue; rental income; park and ride revenue.

CATA's organizational structure (Figure 5) includes an Advisory Board composed of representatives from the five communities it serves, which is responsible for hiring the Administrator, passing the annual budget, and performing other duties as outlined in state law and Advisory Board bylaws. The Administrator manages the day-to-day operations, including managing staff, overseeing CATA's contractors, and supervising the brokerage manager. The operation of CATA's transit service and maintenance of CATA's transit assets are contracted out to the Cape Ann Transportation Operating Company, Inc. CATA's Brokerage Manager oversees its brokerage operation.

3.2 Mission

As a public entity CATA has a responsibility to serve the people who live and work in its community, which CATA achieves by holding itself to the following mission:

"It is CATA's mission to provide public transportation to residents and visitors of member communities in a safe and courteous manner that exceeds the customer's expectations for quality, reliability, and services in a comfortable and respectful environment."

Figure 5. CATA Organizational Chart

Source: CATA

3.3 Goals and Objectives

The 5-year CRTP is an opportunity for CATA and its stakeholders to direct its future course. Goal setting is an iterative process where CATA takes stock of the completed and outstanding goals from previous plans and creates new goals. In consultation with members of the community, local and state leaders, past plans, and other stakeholders, the following are the goals and objectives for the coming 5 years identified by CATA staff:

- Reduce summer traffic over Blynman Canal Bridge.
- Improve service connections between bus and commuter rail in Cape Ann area.
- Improve connections between Rockport and Gloucester.
- Expand multimodal transportation hubs through the addition of passenger amenities like shelters and new benches.
- Increase service span (particularly off-peak) and geographic extent of service.
- Make transit more appealing and accessible for tourists.
- Move toward an alternative fuel vehicle fleet.
- Simplify the fare structure.

4. Transit Service Overview (FY 2015–FY 2019)

The CATA service area is comprised of five communities in Essex County. Service is concentrated in Gloucester, the largest community in the service area, and Rockport. Ipswich and Essex have lower levels of seasonal service. Hamilton, which was added to the service area in 2019, is served by demand response transportation.

CATA provides year-round fixed route service to Gloucester and Rockport, with seasonal fixed route service to Ipswich and Essex. There is also year-round weekend service from Gloucester to shopping centers in Danvers and Peabody. The main transportation hub in the CATA service area is the MBTA commuter rail station in Gloucester. Commuter rail service on the line serving Gloucester and Rockport alternates between Gloucester/Rockport and Newburyport (outside CATA's service area), and generally provides service to North Station in Boston every two hours. A secondary hub for CATA fixed route service is the Rose Baker Senior Center in Gloucester, providing for transfers between CATA fixed route buses.

CATA provides two demand response services. The first, Dial-A-Ride, is available to all residents in the CATA service area who are age 60 or over. The second, ADA Paratransit, is available year-round in Rockport and Gloucester, and seasonally as appropriate in Ipswich and Essex, only for qualifying individuals.

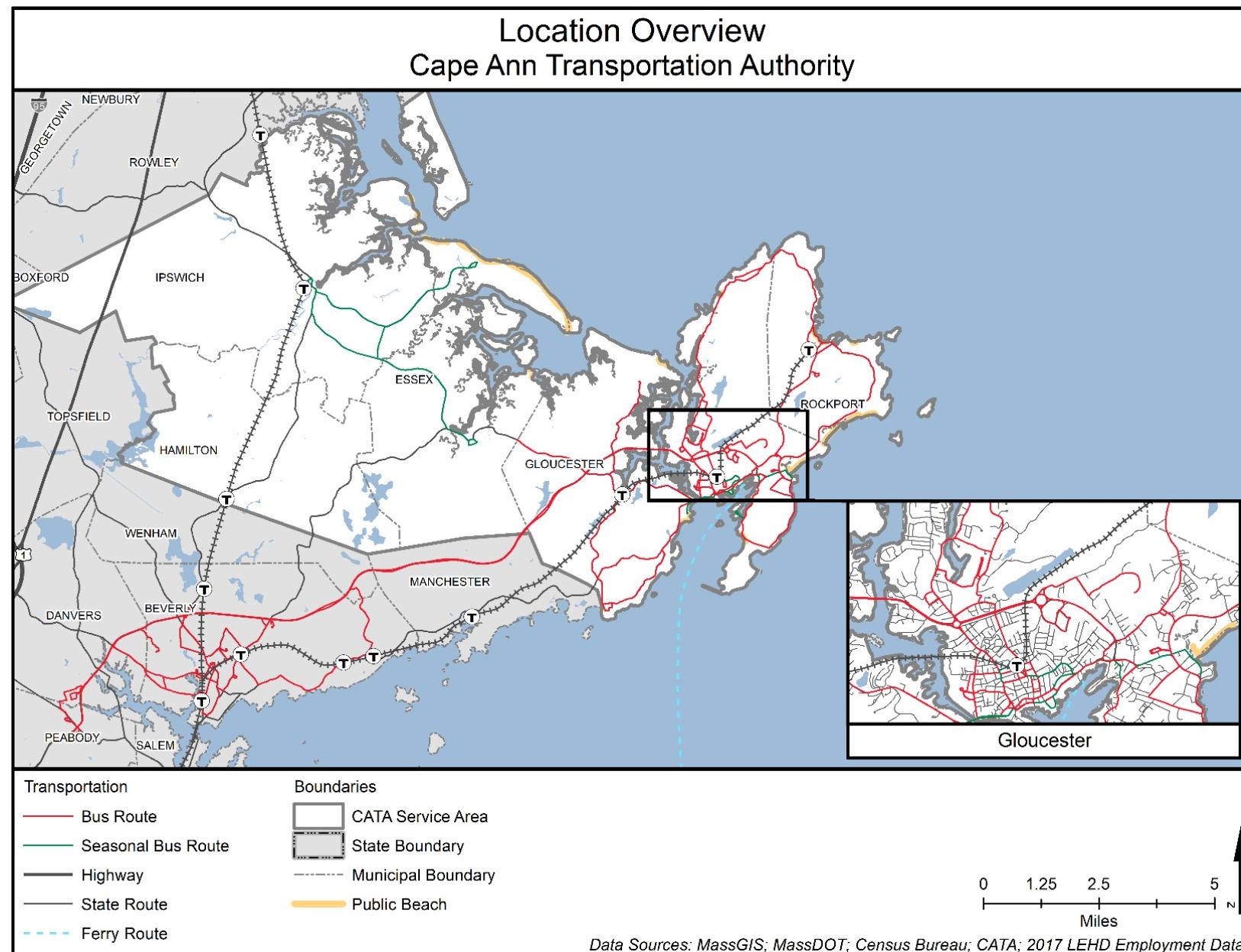
In addition to the transportation services provided, CATA also operates an HST brokerage. This brokerage acts as a connector between clients of agencies (e.g., MassHealth) and door-to-door transportation services. The brokerage component of their operations is not included in this analysis.

4.1 Description of Existing Services

The member communities in the CATA service area are defined to a certain extent by seasonal variation in activity. The summer months on Cape Ann represent the peak of transportation and economic activities, as many people travel to Cape Ann to enjoy the local art venues, restaurants, and beaches in the area. All the communities have a relatively large number of retired persons, reflected in the demographic makeup of the service area.

The bus routes primarily serve Gloucester and Rockport with weekend service to shopping in Peabody and Danvers (Figure 6). Three shuttles serving Ipswich, Essex, and points of interest in Rockport and Gloucester are seasonal-only and operate during warm weather months. Fixed route service is a transportation alternative to driving on congested roadways, with dedicated service between park and ride lots and downtown Gloucester and Rockport.

The demand response service provides essential mobility options for many residents, particularly in Ipswich, Essex, and now Hamilton. The relatively large number of seniors in these communities means that ADA and Dial-A-Ride service provides the essential link to services like medical appointments, grocery shopping, and pharmacy visits. The rural nature of these communities means that, with the exception of seasonal service, fixed route service is not a practical option.

Figure 6. CATA System Map

Source: CATA

4.1.1 Route Descriptions

CATA runs six principal routes with a color scheme naming convention, some of which have specific variations, in addition to three seasonal shuttles (Table 3). Fixed route service primarily acts to connect Rockport and Gloucester, as well as provide connections between outlying neighborhoods with essential services like grocery stores. Connections between downtown Gloucester and the Danvers/Peabody malls run on Saturdays only.

Table 3. Current Service Overview

Route	Description
Red Line	Gloucester to Rockport via Thatcher Road
Green Line	Gloucester to Rockport via Eastern Avenue
Green Line – Blackburn Industrial Park	Downtown Gloucester to Blackburn Industrial Park
Orange Line	Gloucester Circulator serving senior housing, grocery/pharmacies, and local medical facilities
Blue Line	Gloucester to Rockport via Lanesville
Yellow Line	Downtown Gloucester to Magnolia
Yellow Line (Saturday only)	Gloucester to Danvers and Peabody Malls
Purple Line	Downtown Gloucester to West Gloucester
Rockport Shuttle (seasonal)	Rockport Park and Ride to downtown Rockport
Ipswich-Essex Explorer (seasonal)	Ipswich Commuter Rail Station to Crane Beach and Essex
Stage Fort Park Shuttle (seasonal)	Stage Fort Park to downtown Gloucester, Gloucester Commuter Rail, Good Harbor Beach, and other points of interest

Source: CATA

4.1.2 Service Hours

The six primary routes operated by CATA generally run between 10 and 12 hours on weekdays and 8 hours on Saturdays. The seasonal shuttles, which operate to transport tourists, generally run on weekends and holidays, with the exception of the Rockport Shuttle, which runs 7 days a week in July and August (Table 4). In response to the COVID-19 pandemic, CATA has made long-term changes to frequencies on several routes; these changes have the potential to become permanent as CATA has received positive feedback from many customers on the changes made.¹³

¹³ CATA has made several long-term service frequency changes due to the COVID-19 pandemic. The Green Line now begins service at 7:30 AM on weekdays and operates until 6:15 PM. On Saturdays, service starts earlier at 9:30 AM and runs until 4:15 PM. The Orange Line operates from 8:00 AM to 5:21 PM on weekdays and from 9:00 AM to 3:50 PM on Saturdays. The Purple Line operates from 6:45 AM to 4:57 PM on weekdays and from 8:30 AM to 4:57 PM on Saturdays. There is no service to the Mall. The Yellow Line operates from 6:55 AM to 4:27 PM on weekdays and from 9:00 AM to 4:27 PM on Saturdays. The Blue Line operates from 7:25 AM to 6:51 PM on weekdays and 7:50 AM to 5:55 PM on Saturdays. The Red Line operates from 6:40 AM to 5:19 PM on weekdays and 10:25 AM to 4:56 PM on Saturdays.

Table 4. Span of Service Hours

Route	Weekday	Saturday	Sunday
Red Line	6:11 AM–6:49 PM	10:25 AM–5:01 PM	No service
Green Line	7:30 AM–5:57 PM	9:30 AM–3:56 PM	No service
Green Line – Blackburn Industrial Park	6:29 AM–6:42 AM	No Service	No service
Orange Line	6:58 AM–5:41 PM	9:00 AM–3:50 PM	No service
Blue Line	6:05 AM–6:56 PM	8:25 AM–5:50 PM	No service
Yellow Line	6:57 AM–3:58 PM	9:00 AM–4:27 PM	No service
Yellow Line (Mall Bus Saturday only)	No service	10:00 AM–5:48 PM	No service
Purple Line	5:49 AM–4:30 PM	9:00 AM–5:00 PM	No service
Rockport Shuttle (seasonal)	11:00 AM–6:53 PM	11:00 AM–6:53 PM	11:00 AM–6:53 PM
Ipswich-Essex Explorer (seasonal)	No service	10:20 AM–5:50 PM	10:20 AM–5:50 PM
Stage Fort Park Shuttle (seasonal)	No service	10:00 AM–5:39 PM	10:00 AM–5:39 PM
Dial-A-Ride (Senior Van Service)	9:00 AM–2:30 PM	No service	No service
ADA Van Service	Comparable to fixed route times	Comparable to fixed route times	Comparable to fixed route times

Source: CATA

4.1.3 Service Frequency

Most of the services run by CATA have a frequency of 60 minutes or greater, with the exception of the seasonal shuttles, which tend to have higher frequencies (Table 5). In response to the COVID-19 pandemic, CATA has made long-term changes to frequencies on several routes, these changes have the potential to become permanent as they have been popular with CATA's riders.¹⁴

Table 5. Frequency of Service (Minutes)

Route	Weekday	Saturday	Sunday
Red Line	Four trips daily	Four trips daily	No service
Green Line	60 minutes	60 minutes	No service
Green Line – Blackburn Industrial Park	One trip daily	No Service	No service

¹⁴ CATA has made several long-term service frequency changes due to the COVID-19 pandemic. The Purple Line now makes six trips on weekdays and seven on Saturdays. The Yellow Line now makes five trips on weekdays and four on Saturdays (or has 120-minute headways most of the day). The Red Line now makes six trips on weekdays and four trips on Saturdays.

Route	Weekday	Saturday	Sunday
Orange Line	60 minutes	60 minutes	No service
Blue Line	120 minutes	120 minutes	No service
Yellow Line	Three trips daily	120 minutes	No service
Yellow Line (Saturday only)	No service	90 minutes	No service
Purple Line	Three trips daily	120 minutes	No service
Rockport Shuttle (Seasonal)	20 minutes	20 minutes	20 minutes
Ipswich-Essex Explorer (Seasonal)	No service	45 minutes	45 minutes
Stage Fort Park Shuttle (Seasonal)	No service	60 minutes	60 minutes

Source: CATA

4.1.4 Operating Funding

Operating subsidies are provided through state contract assistance from the Commonwealth (46.0 percent), service assessments from towns in the service area (19.7 percent), and the federal government (6.4 percent) in the form of Section 5307 urbanized area formula grants. Fares also provided 6.4 percent of CATA's operating budget. Additionally, CATA generates a significant amount of funding from services provided to the DDS, DMA, the operation of MBTA Commuter Rail shuttles, and a shuttle service in Beverly, which is funded by the City of Beverly with assistance from MBTA. In addition to providing specialized transit service to state and local entities, CATA receives revenue from advertising, park and ride facilities, and rental income (Table 6).

Funding streams remained consistent from FY 2017 to FY 2019, with a large increase in funds generated from non-subsidy sources in 2019. This jump in revenue is due to increased service provided to the DMA and CATA operating more MBTA shuttles than in previous years.

Table 6. Operating Funding Sources

Funding Source	FY 2017	%	FY 2018	%	FY 2019	%
Federal	\$187,868	7.09%	\$300,322	11.23%	\$186,150	6.35%
State	\$1,347,622	50.84%	\$1,323,445	49.50%	\$1,347,622	45.95%
Local	\$546,394	20.61%	\$562,113	21.03%	\$576,166	19.65%
Farebox	\$182,875	6.90%	\$180,227	6.74%	\$188,703	6.43%
Partnerships/ contracts*	\$144,627	5.46%	\$144,963	5.42%	\$150,466	5.13%
Other**	\$241,534	9.11%	\$162,302	6.07%	\$483,462	16.49%
TOTAL	\$2,650,920	100.00%	\$2,673,372	100.00%	\$2,932,569	100.00%

Source: NTD, CATA

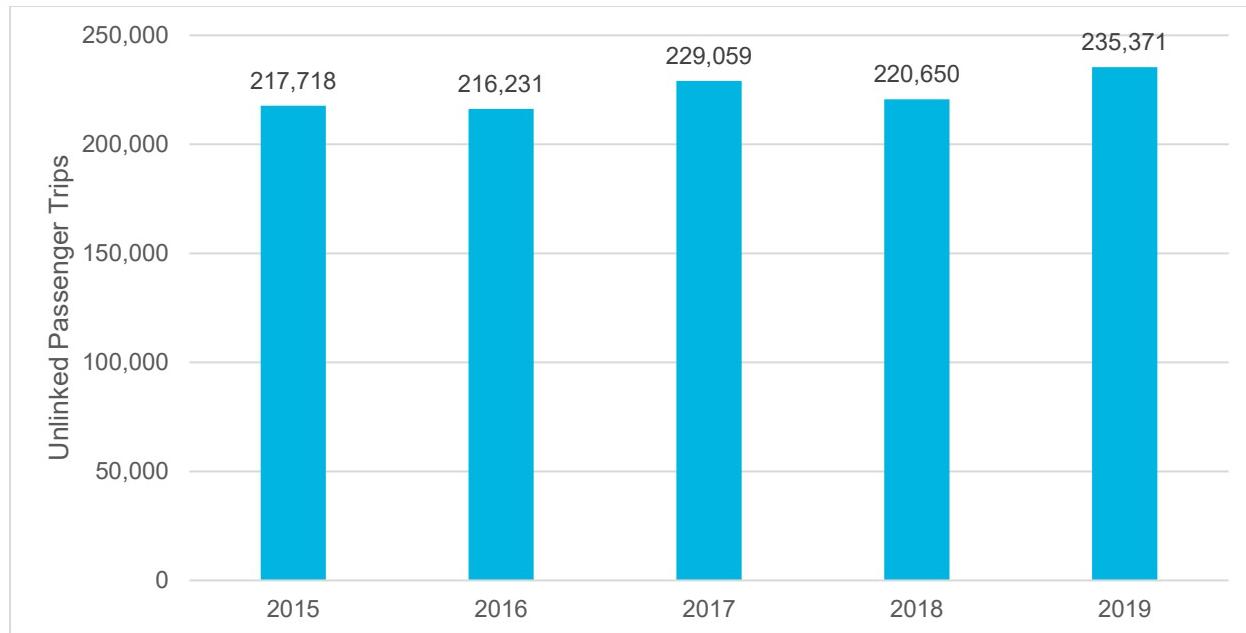
* Beverly Shuttle service.

** Includes services provided to DDS, DMA, MBTA shuttles; advertising revenue; rental income; park and ride revenue.

4.2 Ridership and Service Operations

CATA's total ridership increased steadily between 2015 and 2019, rising from under 220,000 trips per year to over 235,000 trips over that time period (Figure 7).

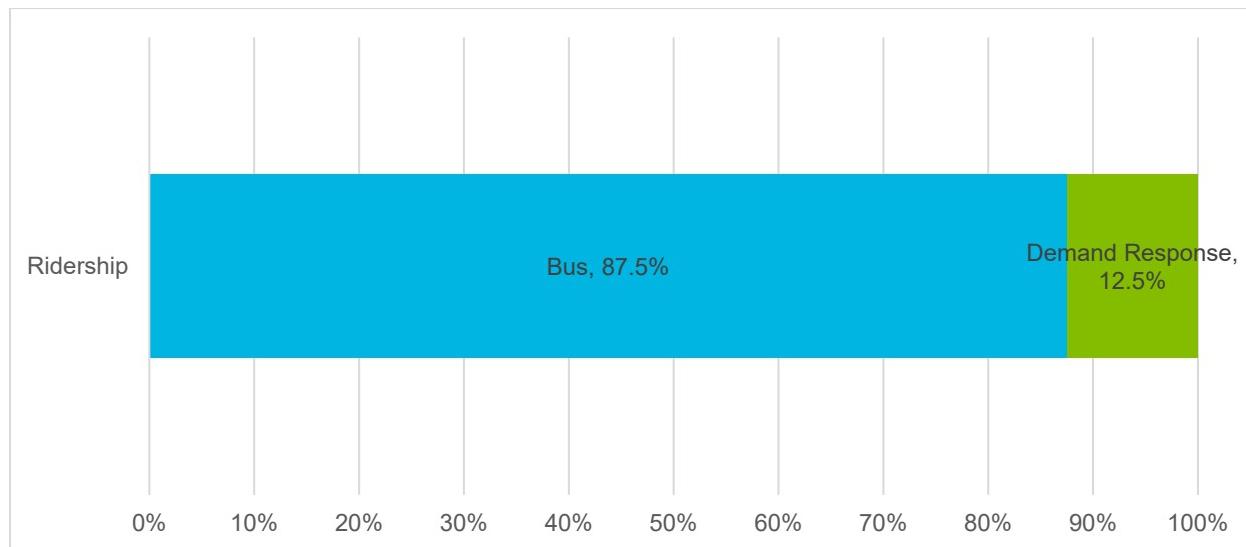
Figure 7. Annual System Ridership Trends (FY 2015–FY 2019)



Source: CATA, MassDOT

The majority of trips taken in the CATA service area are on the fixed route system. A relatively high proportion of trips are taken on the demand response system, likely because demand response is the only year-round mode available in three out of the five member communities. Furthermore, CATA offers van service for anyone age 60 or over, which is above and beyond typical requirements for demand response service (Figure 8).

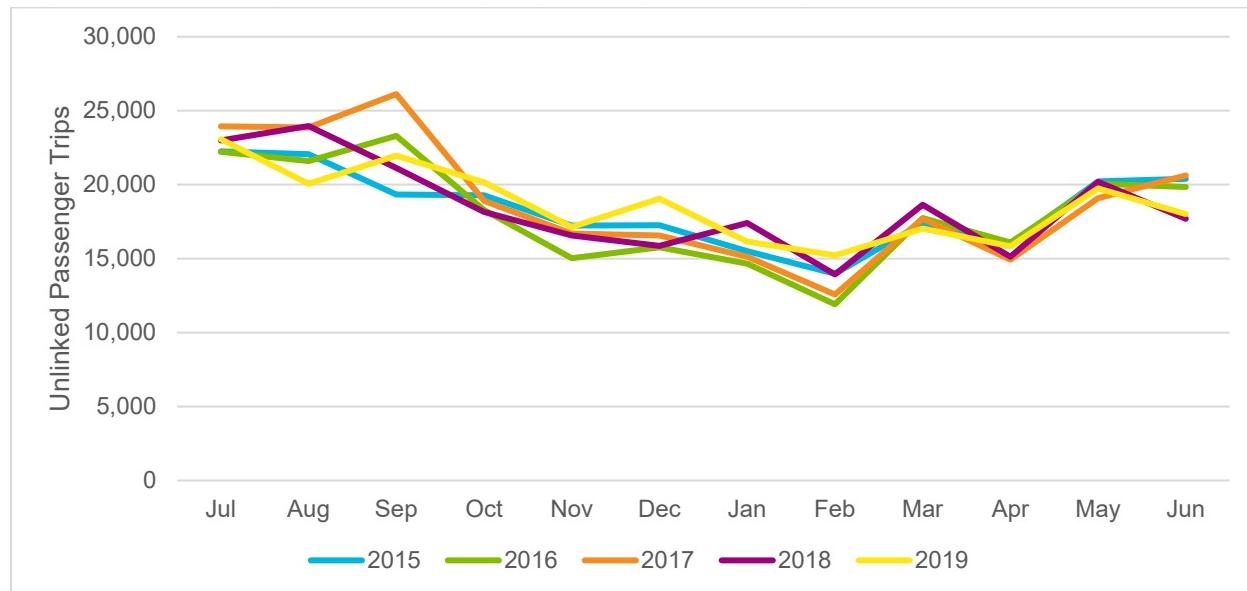
Figure 8. Ridership Breakdown by Service Type (FY 2019)



Source: CATA

CATA ridership peaks in the summer and then hits its lowest point in February, which tracks with the seasonal fluctuations of activity on Cape Ann (Figure 9).

Figure 9. Annual System Ridership by Month (2015–2019)



Source: NTD

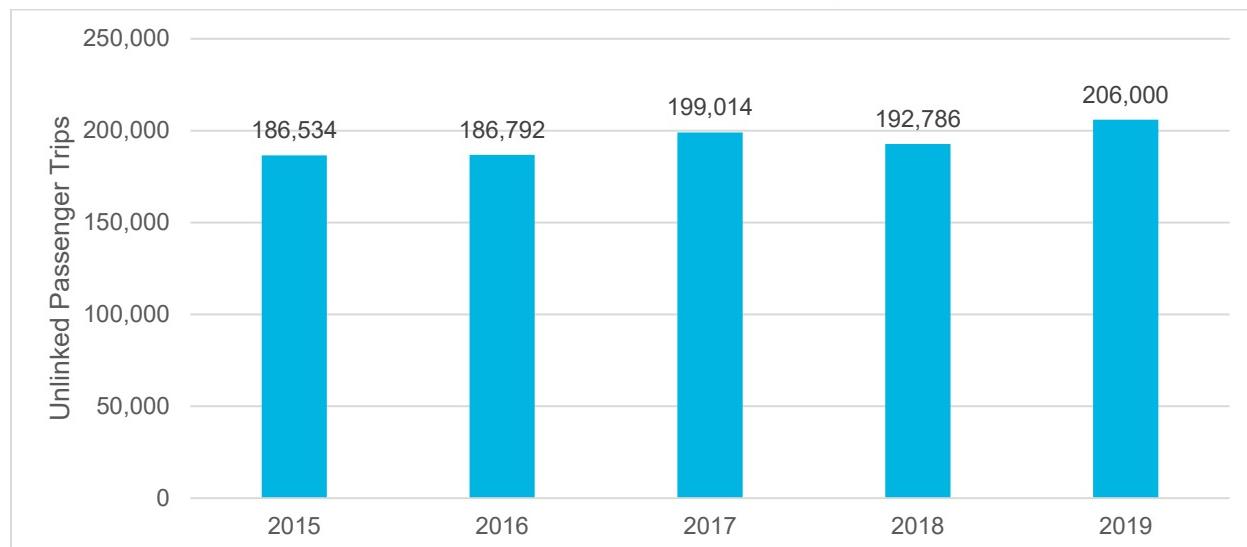
4.2.1 Fixed Route Service

The operating environment for fixed route services in the CATA region presents obstacles to running a high-ridership system. The population and activity flows are seasonal in nature, and the region is relatively low density. Fixed route operating statistics reflect this context.

4.2.1.1 Fixed Route Ridership Profile

Fixed route ridership increased from 2015 to 2019, growing by more than 10 percent since 2015 (Figure 10).

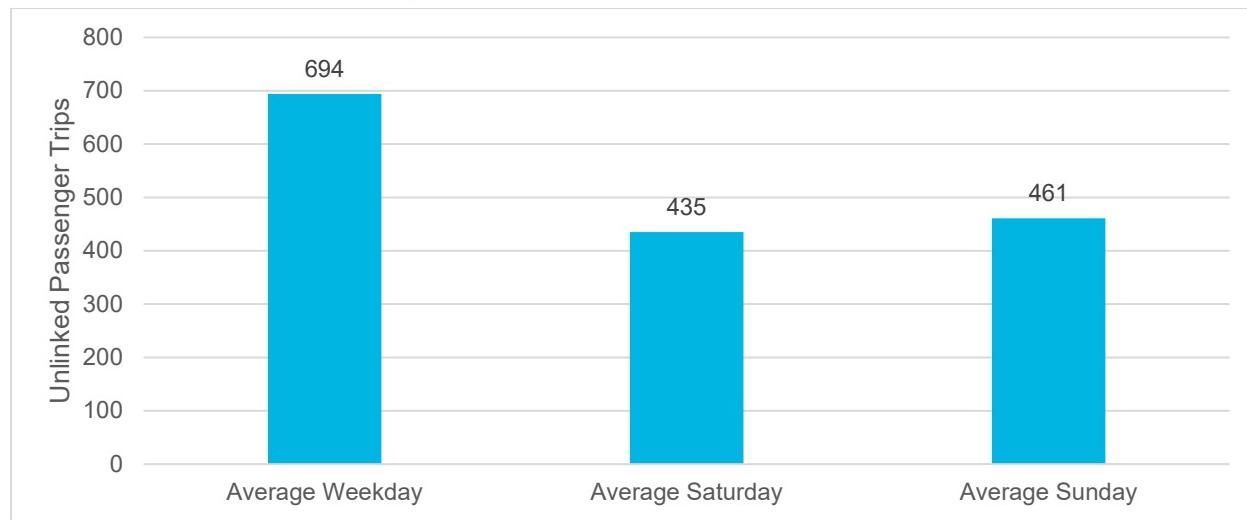
Figure 10. Fixed Route Annual Ridership (FY 2015–FY 2019)



Source: CATA

Due to the tourist-heavy focus of the service, Saturday and Sunday ridership is relatively robust, at roughly two-thirds the ridership of weekday ridership (Figure 11). Many other transit systems have weekend ridership levels of only half that or less compared to weekday ridership.

Figure 11. Fixed Route Average Daily Ridership (FY 2019)

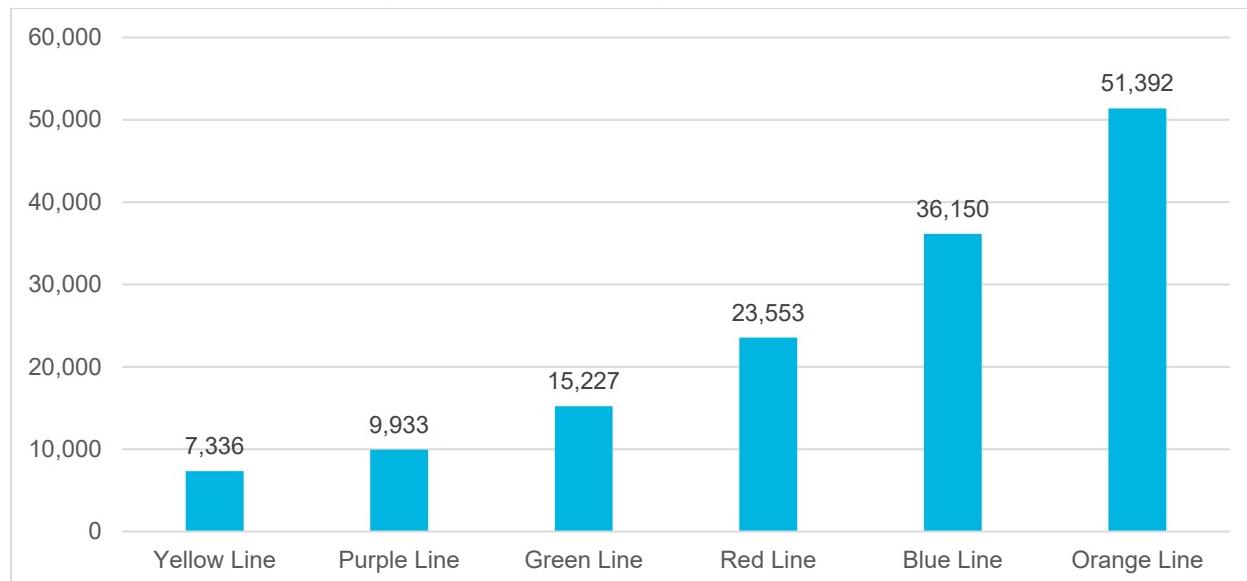


Source: CATA

The Orange Line operates in the core area of Gloucester, providing service to the commuter rail station, large employers, and O'Maley Middle School and Gloucester High School. It is the highest ridership route in the system (Figure 12). Second highest is the Blue Line, which provides service between Rockport and Gloucester and also serves the two schools.

The Yellow Line, which serves the Magnolia neighborhood of Gloucester as well as weekend service to shopping in Danvers and Peabody, is the lowest ridership route in the system. The second lowest is the Purple Line, which serves low-density areas in West Gloucester. Ridership statistics for seasonal shuttles are not included in this report but will be included in future route-level performance reviews.

Figure 12. Annual Ridership by Route (FY 2019)



Source: CATA

4.2.1.2 Fixed Route Ridership, Hours, Miles, and Operating Cost

Fixed route ridership and revenue hours have largely fluctuated in tandem, with the latter declining from FY 2016 to FY 2018, and both substantially increasing in FY 2019. This growth is due to the MBTA Commuter Rail shuttle service provided by CATA due to the Gloucester Drawbridge project. Revenue miles decreased considerably from FY 2015 to FY 2016 and began to climb again in FY 2018 (Table 7).

Table 7. Annual Fixed Route Operating Statistics (FY 2015–FY 2019)

Operating Statistics	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	% Change 2015–2019
Ridership	185,534	186,792	199,014	192,786	206,000	+11.0%
Revenue Hours	14,201	14,708	14,494	14,040	15,413	+8.5%
Revenue Miles	253,551	208,869	208,486	211,909	218,072	-14.0%
Operating Cost	\$1,675,891	\$1,835,038	\$1,639,149	\$1,714,855	\$1,854,698	+10.7%

Source: NTD, CATA

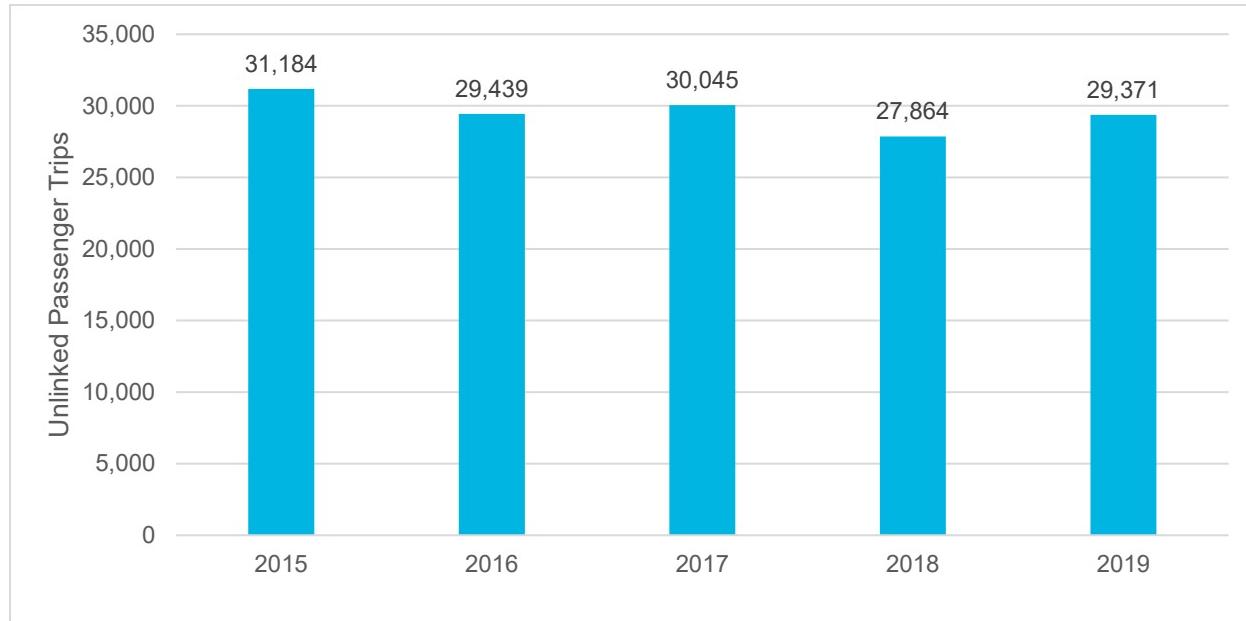
4.2.2 Demand Response Service

As previously noted, CATA operates two demand response services. The first is the complementary paratransit required by ADA, which provides transit service to people who are not able to use the fixed route service. This service is provided community-wide in Gloucester and Rockport and seasonally, as required, in Ipswich and Essex.

CATA also provides Dial-A-Ride service for seniors in its member communities. This service is generally operated between 9:00 AM and 2:30 PM, Monday through Friday.

4.2.2.1 Demand Response Ridership Profile

Ridership has modestly declined since 2015 (Figure 13). This may be due to the loss of three DDS/DayHab routes in FY 2016. CATA's operator lost the contract to a lower bidder—the service is still available but operated by another provider.

Figure 13. Demand Response Annual Ridership (FY 2015–FY 2019)

Source: CATA, NTD, MassDOT

4.2.2.2 Demand Response Hours, Miles, and Operating Cost

CATA demand response miles and cost both declined substantially from 2015 to 2016 but have begun to rebound. Ridership also declined, reaching a 5-year low in FY 2018, followed by an increase in FY 2019. Costs in 2019 exceeded costs in 2015 for the first time during the 5-year period (Table 8).

Table 8. Annual Demand Response Operating Statistics (FY 2015–FY 2019)

Operating Statistics	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	% Change 2015–2019
Ridership	31,184	29,439	30,045	27,864	29,371	-5.8%
Revenue Hours	11,796	9,935	9,252	8,863	10,513	-10.9%
Revenue Miles	161,917	126,252	138,198	111,570	131,633	-18.7%
Operating Cost	\$863,375	\$747,852	\$712,531	\$779,396	\$887,199	+2.8%

Source: NTD, CATA

4.3 Policies and Procedures

CATA has numerous policies and procedures related to using the service. These include:

- Dial-A-Ride eligibility and service guidelines
- ADA paratransit eligibility and service guidelines
- Complaint policy and procedures

- Title VI guidelines, procedures, and notice to the public
- Fare policies and rates
- Procurement policies and Disadvantaged Business Enterprise goals

These policies can be found on the CATA website (<http://www.canntran.com/>).

4.4 Regional Connections and Other Transit Providers

CATA service connects to the MBTA commuter rail system at the Gloucester, West Gloucester, and Rockport train stations, which connects every 2 hours to North Station in Boston.

4.5 Sustainable Practices

CATA and the Commonwealth of Massachusetts have prioritized sustainability and environmental stewardship in public transportation policy and operations. CATA's 2015 RTP measured progress made in accomplishing MassDOT's sustainability initiative, GreenDOT, and found that CATA was working continuously to achieve the initiative's goals, accomplishing many of them ahead of schedule. Subsequent to GreenDOT, the Commonwealth convened a Commission on the Future of Transportation, which released a report in 2018 that examined, among other topics, climate, and resiliency. The report stated the following as one of the chief transportation goals of the Commonwealth:

“Substantially reduce greenhouse gas (GHG) emissions from [the] transportation sector in order to meet the Commonwealth’s Global Warming Solutions Act (GWSA) commitments, while also accelerating efforts to make transportation infrastructure resilient to a changing climate.” (page 8)

The Commission recommended the Commonwealth pursue the following sustainable efforts that directly affect CATA's operations:

- Prioritize investment in public transit as the foundation for a robust, reliable, clean, and efficient transportation system.
- Establish a goal that all new cars, light duty trucks, and buses sold in Massachusetts will be electric by 2040.
- Make transportation infrastructure resilient to a changing climate by providing RTAs with resources to assess the vulnerability of their infrastructure and provide design standards to construct resilient infrastructure moving forward, with a mandate that all construction meet statewide LEED Plus green building standards. As of September 2020, 92 public buildings have been LEED certified since the first certification in 2006.
- Reduce overall energy consumption by 35 percent at state-owned and -leased buildings by 2020, using FY 2004 as the baseline. As of FY 2018, overall energy usage decreased by 14 percent.

The Commission on the Future of Transportation led to convening the RTA Task Force, consisting of representatives from the Commonwealth, RTA Administrators, and other public transportation stakeholders. Among numerous recommendations, the final RTA Task Force report noted that:

“A top concern for the [Commission on the Future of Transportation] was increased public transit ridership as part of a broader effort to reduce greenhouse gas emissions and combat climate change . . . The RTAs will require additional investment, both in operations and capital funds, to achieve these goals.” (page 33)

This section outlines CATA's efforts around sustainability and environmental stewardship efforts undertaken to date, describes planned implementations of future sustainability efforts, and lists needs related to climate change and the environment.

4.5.1 Current Practices

CATA has made numerous adjustments or investments to make their operations more sustainable. These practices support Commonwealth initiatives, take advantage of federal funding opportunities, provide environmental benefits, enhance cost efficiency, and improve CATA's resiliency.

4.5.1.1 Clean Vehicles

In the past two decades, there has been growing interest in transitioning transit fleets from diesel to hybrid-electric and all-electric ("clean") vehicles. There have been significant advancements in hybrid and electric bus technology in recent years, and the vehicles have become cheaper as batteries have become less expensive. CATA maintains the following equipment and policies relating to clean vehicles:

- CATA's operations and maintenance facility is equipped with EV chargers.
- CATA complies with MassDOT's anti-idling policy (running a stopped vehicle's engine for longer than 5 minutes is against state law).
- CATA is actively investigating the feasibility of operating electric buses and monitoring the technology advancements necessary to run electric vehicles in the CATA area.

4.5.1.2 Education

Public transit usage plays an important role in the reduction of GHG emissions. According to FTA's 2010 report *Public Transportation's Role in Responding to Climate Change*¹⁵, public transit produces 51 percent less CO₂ emissions per passenger mile than single-occupancy vehicles. The majority of Massachusetts residents (68.5 percent) indicated they used an automobile as their primary mode of travel in the 2010-2011 Massachusetts Travel Survey, while 7.6 percent indicated they used transit.

Transit authorities play an important role in encouraging mode shift, and one of the tools available to them is promoting use of their service through education. Education comes in many forms, including providing wayfinding, regional partnerships with large trip generators, and generating instructional materials that make transit services less intimidating to use. CATA employs the following educational strategies in efforts to boost ridership:

- CATA added a bus logo to the sign along Route 128, directing people to the park and ride at Stage Fort Park.
- CATA staff visits senior centers regularly to provide education about CharlieCards and informational sessions on CATA services, making the Authority more present in the community.
- CATA hosted two Proterra buses in 2019. One bus visited CATA's operations and maintenance facility for an afternoon, and the other bus visited and operated on a route for a week to introduce electric buses to the community.
- Public meeting notices include information on accessing the meeting via transit.

¹⁵ Federal Transit Administration, *Public Transportation's Role in Responding to Climate Change*, January 2010, <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/PublicTransportationsRoleInRespondingToClimateChange2010.pdf>

4.5.1.3 Multimodal Integration

Transit authorities can also strengthen multimodal connections in efforts to boost ridership, which is a priority for the Commonwealth. Safe and convenient access to transit facilities via different modes increases the catchment area for transit service. Integrating transit with alternative modes boosts ridership, encourages active transportation, and reduces GHG emissions by offering alternatives to driving. CATA has implemented the following measures to support multimodal integration:

- All CATA buses have bike racks.
- CATA provides shuttle service to the MBTA Rockport, Gloucester, and West Gloucester commuter rail stations.
- Bike racks are installed at CATA's operations and maintenance facility, the Gloucester Commuter Rail Station, and the Gloucester Council on Aging (COA), which serves as CATA's hub.
- CATA started issuing Transportation Access Passes and Senior CharlieCards locally in 2015, allowing for easier payment on commuter rail, MBTA in Boston, and CATA.

4.5.1.4 Efficient Facilities

Building green facilities (e.g., LEED Certified) or retrofitting existing facilities with green infrastructure is an opportunity for transit authorities to reduce both environmental impacts and operational costs. The Commonwealth has committed that state-funded infrastructure must follow green construction guidelines from 2020 on, stating in the 2018 Commission on the Future of Transportation in the Commonwealth report, that if infrastructure does not meet MassDOT-developed resiliency design standards, it will not receive state funding.

This commitment is echoed in the Commonwealth's *Clean Energy and Climate Plan for 2020*¹⁶, which established the Leading by Example (LBE) Program in 2007 to reduce energy use in public buildings across the state. The LBE program created a "Massachusetts LEED Plus" building standard for new construction and major renovations that requires all state government projects to perform 20 percent better than the Massachusetts energy code and be LEED-certified.

CATA has taken steps to making their facilities more environmentally friendly, including initiating LEED certification for existing operations and maintenance facilities. They have made the following improvements, replacing less efficient infrastructure and systems to minimize environmental impacts in their operations:

- CATA has installed motion sensor/occupancy lighting in their facilities.
- There is a solar installation on the property of their operations and maintenance facility.
- CATA is working toward having more of their energy needs met through internal production or green energy purchases.
- The gasoline fueling pumps in CATA's maintenance yard are retrofitted with vapor recovery systems.

4.5.1.5 Recycling

Recycling waste products has been commonplace across the nation for the past several decades. The Commonwealth has been at the forefront of recycling efforts with the plan 2010-

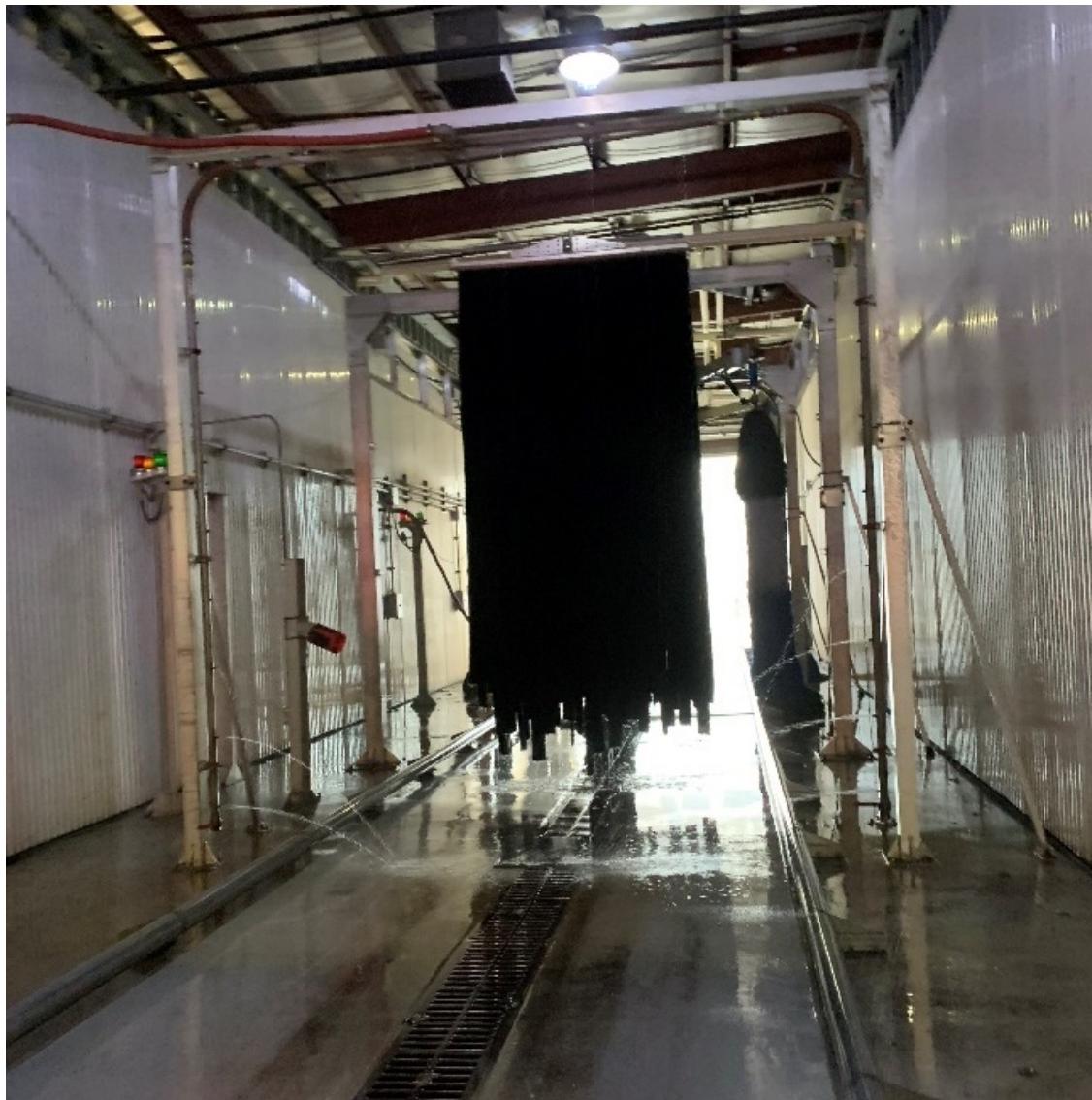
¹⁶ Executive Office of Energy and Environmental Affairs, *Clean Energy and Climate Plan for 2020*, December 2015, <https://www.mass.gov/files/documents/2017/12/06/Clean%20Energy%20and%20Climate%20Plan%20for%202020.pdf>

*2020 Solid Waste Master Plan: A Pathway to Zero Waste*¹⁷, which outlines actions the Commonwealth could take to reduce solid waste production. The plan stated that public institutions should “lead by example and implement innovative materials management strategies that improve purchasing efficiencies, reduce waste, maximize the percent of waste that is recycled or composted and minimize disposal.”

In addition to recycling solid waste, recycling water used for washing vehicles is also increasingly commonplace in the transit industry. Recycling water used in bus washes and capturing rainwater for use reduces water consumption and contamination and saves money (Figure 14). CATA has modified their operations in the following ways to reduce waste:

- CATA purchases 100 percent recycled paper products.
- CATA’s bus wash facility has been repaired to allow for proper function and water recycling.
- CATA participates in paper recycling and can redemption.

Figure 14. CATA Bus Wash System



¹⁷ Massachusetts Department of Environmental Protection, *Massachusetts 2010-2020 Solid Waste Master Plan*, April 2013, <https://www.mass.gov/doc/2010-2020-solid-waste-master-plan-a-pathway-to-zero-waste/download>

4.5.2 Improvements Underway

CATA continues to expand the sustainable practices used in their operations. One major improvement in educating the public about transit and green initiatives is the planned update of the CATA website. This will enhance CATA's capabilities for providing digital information about benefits of using the service as well as tools for riders to navigate the system.

4.5.3 Documented Needs

CATA hopes to continue working to make their operations more sustainable. However, CATA acknowledges that the ability to make any capital improvements is contingent on securing funding, which may be challenging given the uncertainty surrounding impacts on federal, state, and local funding from the COVID-19 pandemic and associated economic recession.

CATA has identified the following needs to support their efforts to operate a more sustainable system moving forward:

- CATA is pursuing MassDOT assistance with evaluating the feasibility of electric vehicles in Cape Ann.
- CATA is working to strengthen educational practices with the goal of attracting new customers.

4.6 Fare Rates and Structure

A key responsibility of transit agencies is setting appropriate fare rates that balance maintaining an affordable transportation system with the financial needs of the organization. The RTA Task Force recommended that RTAs should periodically review fares to ensure that fare levels are appropriate, and this recommendation was subsequently included in the MOUs between the RTAs and MassDOT. The purpose of this section is to outline existing fare policies and collection methods and to describe future plans and needs of CATA with regard to fares.

4.6.1 Collection Methods and Media

CATA began using Scheidt & Bachmann fareboxes on their fixed route buses in March 2012. The Scheidt & Bachmann system accepts cash, transfers, and MBTA CharlieCards, a smart card to which customers can add value.

4.6.1.1 Fare Technology and Media

Scheidt & Bachmann fareboxes are widely used across the state, including the MBTA system. MBTA has been working on updating its fare payment system since 2018, and there is still uncertainty surrounding what the new fare technology will be. Ideally CATA and other RTAs, especially those that connect to MBTA services (like CATA), should share a fare payment system with MBTA to encourage multimodal trips.

A significant drawback to the Scheidt & Bachmann system is that there are no ticket vending machines (TVMs) within CATA's service area where CharlieCards can be purchased or have value added. Because CATA does not have a central intermodal terminal, there is no obvious location for installing a TVM. This, in addition to the cost of procurement and maintenance of the TVM, has prevented CATA from deploying a TVM unit. As a result, customers must load value onto their CharlieCards through the MBTA website or at a TVM within the MBTA (or another RTA) service area. Seniors can apply for a senior CharlieCard at the CATA Operations Center in Gloucester. Student passes are also available for purchase at CATA's offices or at prescheduled sales at the local schools.

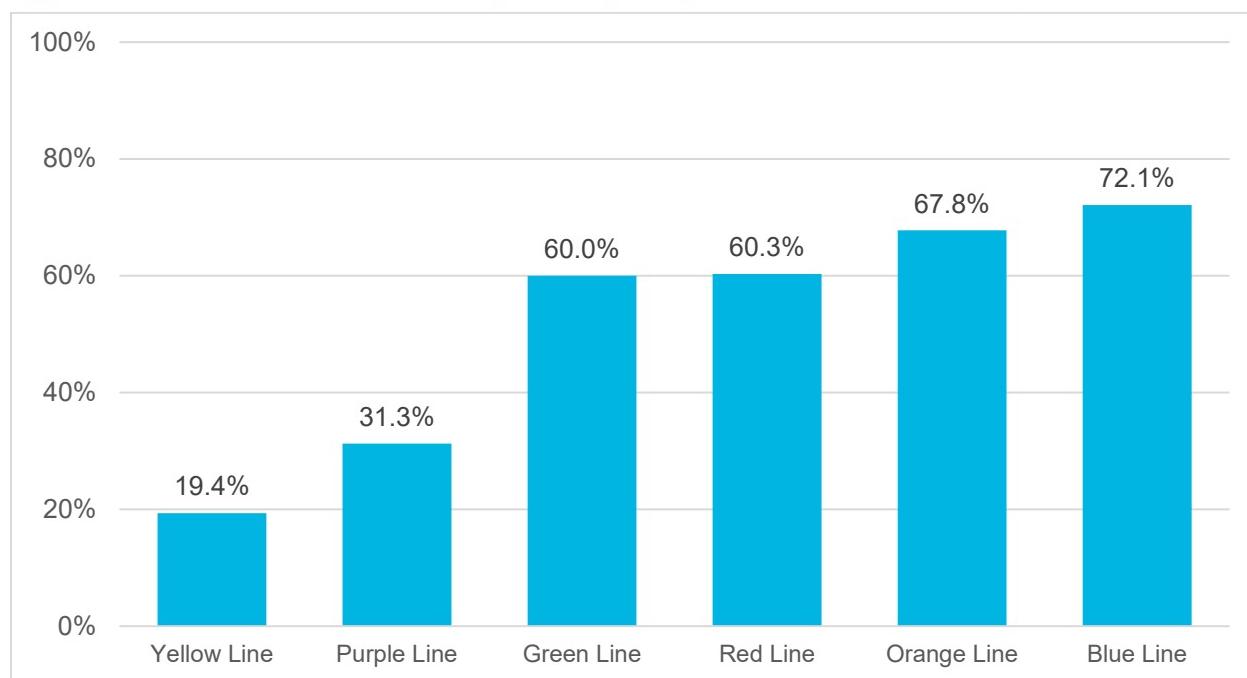
Demand response fares are generally paid in cash only, though CATA does sell “out of town medical” bus passes for the Town of Ipswich through their COA, as well as dialysis passes that allow six round trip rides for the cost of five. Dialysis passes are sold through CATA at their administrative offices.

The majority of CATA’s fixed route customers pay with cash, as shown on Figure 15. CATA does not offer a financial incentive for using a CharlieCard such as reduced fare or transfers with use of CharlieCard.

4.6.1.2 Changes During COVID-19 Pandemic

In order to mitigate the public safety risks associated with collection of fare payment during the COVID-19 pandemic, CATA suspended fare collection enforcement in March 2020. Fare collection enforcement resumed on September 1, 2020, consistent with state and federal guidance.

Figure 15. Percent of Cash Fares by Route (Sample Date: March 3, 2019)



Source: CATA

4.6.2 Fare Structure

CATA has not raised the base fare for its service in nearly two decades, with the last fixed route fare increase occurring in 2001. Demand response fares were raised significantly in 2007, with the local fare doubling from \$1.00 to \$2.00 and the Dial-A-Ride service outside of Cape Ann and ADA Zone Two service increasing 25 percent (from \$2.00 to \$2.50).

CATA’s new fare policy, which was adopted by its Advisory Board on October 28, 2020, to fulfill the requirement contained within its MOU with MassDOT, reads:

“The Cape Ann Transportation Authority shall undertake a review of expected fare revenue, and the fare structure that generates it, as a component of the annual budget development process. If the Administration, in coordination with the Advisory Board, determines that the

fare structure warrants adjustment, the agency shall undertake a public participation process in accordance with the *Policy Regarding Major Fare and Service Changes.*"

4.6.2.1 Fixed Route Fares

CATA's current fare structure offers full and reduced single-ride fares, with semester and annual passes available to students (Table 9). CATA has three fare zones: trips within Gloucester, trips to/from and within Rockport, and trips to/from Danvers and Peabody on the mall shuttle. The different fare costs associated with the fare zones apply to full fares, reduced fares, and children's fares. Free transfers are available between most CATA routes with some exceptions.

Riders can purchase single rides with cash or use CharlieCards. Reduced fares are available to those who meet ADA requirements, qualify for the Statewide Access Plan, or meet CATA eligibility requirements. CATA offers reduced rides to children ages 5 to 12 and Medicare card holders.

If a rider is disabled or over 60 years of age, they can obtain a Statewide Access Pass in order to qualify for half-fare discounts for fixed route service. Riders must complete an application available from CATA. Eligible riders must either (1) verify their disability from a licensed professional to receive ADA demand response services or (2) provide proof of date of birth to obtain a senior identification (ID) card. ID cards cost \$3.00 each. Those who qualify for ADA demand response services are permitted to bring a personal care attendant on the bus who can ride for free.

Two types of passes are available to CATA customers, a monthly pass for the Beverly Shuttle and a variety of passes for students. The three pass options for students include semester, annual, and an annual pass plus. The annual pass plus is \$25 and allows students to ride for a reduced fare of \$0.50 per trip.

4.6.2.2 Demand Response Fares

CATA's Dial-A-Ride and ADA Paratransit services also have fare zones. The two Dial-A-Ride zones are divided into rides within Gloucester, Rockport, Essex, and Ipswich, and rides outside of Cape Ann. ADA Paratransit has two zones that mirror the fixed route fare zones. Zone One is trips within Gloucester and Zone Two is trips to/from and within Rockport.

CATA offers additional demand response service to area medical facilities. CATA provides residents of its service area trips to the North Shore Dialysis Center and partners with the Ipswich COA to provide out-of-town medical transportation. The fare structure for these services includes a one-way fare, round-trip fare, and discounted 6-trip pass.

Table 9. Fare Structure

Fare Type	Fare (in dollars)
Single Ride One-Way	
One Zone Fare	\$1.00
Two Zone Fare	\$1.25
Full-Fare Gloucester to/from Danvers and Peabody	\$3.00
Half-Fare for Seniors, Disabled, and/or Medicare Card Holders in One Zone	\$0.50
Half-Fare for Seniors, Disabled, and/or Medicare Card Holders in Two Zone	\$0.60

Fare Type	Fare (in dollars)
Half-Fare for Seniors, Disabled, and/or Medicare Card Holders Gloucester to/from Danvers and Peabody	\$1.50
One Zone Children 5-12	\$1.00
Two Zone Children 5-12	\$1.25
Children 5-12 Gloucester to/from Danvers and Peabody	\$1.00
Children under 5	Free
Transfer*	Free
Single Ride Round Trip	
Full-Fare Gloucester to/from Danvers and Peabody	\$5.00
Half-Fare for Seniors, Disabled, and/or Medicare Card Holders Gloucester to/from Danvers and Peabody	\$2.50
Children 5-12 Gloucester to/from Danvers and Peabody	\$2.00
Student Passes	
Semester	\$100.00
Annual	\$200.00
Annual Pass Plus**	\$25.00
ADA Demand Response	
One Fare Zone	\$2.00
Two Fare Zone	\$2.50
Escort	\$2.00
Personal Care Attendant	Free
Dial-A-Ride	
Fare (within Gloucester, Rockport, Essex, and Ipswich)	\$2.00
Fare (outside Cape Ann)	\$2.50
Medical Trips	
Dialysis Center Bus and Ipswich Medical Bus*** One-Way	\$2.50
Dialysis Center Bus and Ipswich Medical Bus*** Round Trip	\$5.00
Dialysis Center Bus and Ipswich Medical Bus*** Passes (Pack of 6)	\$25.00

Source: CATA Fares & Passes, <http://www.canntran.com/fares.cfm>,

http://www.canntran.com/Brochures/CATA_DialARide.pdf, and

http://www.canntran.com/Brochures/CATA_ADA_Brochure.pdf, August 2020.

*No transfers are allowed from Gloucester Cross (Orange Line) and Blackburn Industrial Park

(Green Line) or *Mall Lines* to *lines of another color*.

***Pass Plus* allows students to ride at a reduced fare of \$0.50 per trip.

****Ipswich Medical Bus* is available to Ipswich residents only.

4.6.3 Considerations for the Next 5 Years

CATA is interested in improving its fare technology and structure to make its service work better for Cape Ann residents, including eliminating fare zones. CATA sees the zones as unnecessary given the relatively small area that CATA serves. This change is recommended and will bring CATA in line with industry best practices.

CATA is also considering a cash-free system for its ADA and Dial-A-Ride service, an effort made more urgent by the pandemic. CATA is also considering updating its fixed route fare technology, having seen the benefits of a contactless system during the COVID-19 pandemic. CATA will be consulting with the RTAs that currently are launching mobile ticketing systems.

5. Market Evaluation

5.1 Key Demographic and Geographic Factors

This chapter describes existing and projected socioeconomic characteristics of the area served by CATA examining the following key demographic and geographic measures for the region that impact transit demand:

- **Population Density:** Population density is particularly important when evaluating a transit market. Fixed route transit operates most efficiently in areas where people are in close proximity to one another. Population density gives a good general proxy for where fixed route service can be most effective, with more flexible forms of transportation in less dense areas.
- **Senior Population:** As people age, they are more likely to need public transportation due to health issues or lower incomes. Areas with high proportions of seniors can indicate current or future demand potential for public transportation services.
- **Income and Poverty:** Economic status is a strong factor in the propensity for using transit; low-income households depend on public transportation to get to essential destinations such as work, school, medical appointments, and grocery shopping.
- **Vehicle Ownership:** Related to general economic status, households without access to an automobile are more likely to use public transportation.
- **Race/Ethnicity:** As per agency goals and federal regulations, ensuring appropriate service to areas that are majority minority is a priority for CATA.
- **Job Density:** Census maps show where people live. However, major employment centers are also areas where investing in transit can provide an essential link between key destinations and communities predisposed to using transit. Because CATA's service area is a popular summer tourist destination, jobs in the service sector are significant trip generators.

The CATA service area has a high proportion of population over age 65. This demographic characteristic explains the strong performance of the demand response services in the CATA region.

Table 10. Current Demographic and Socioeconomic Profile (2017)

Area	Median Household Income	% People Living Below 150% the Poverty Level	% Households without Vehicles	% Seniors	% Minority	% People with Disabilities
CATA Service Area	\$78,437	13.60%	7.50%	21.00%	5.40%	10.10%
Massachusetts	\$74,167	17.4%	12.4%	15.5%	27.1%	11.6%
United States	\$57,652	23.7%	8.8%	14.9%	38.5%	12.6%

Source: US Census Bureau 2017 American Community Survey

Figure 16 through Figure 23 show the geographic distribution of these key demographic groups. As the maps show, they are mainly concentrated in Gloucester with other hot spots scattered around the region, including Rockport and the areas around the MBTA Ipswich and Hamilton/Wenham commuter rail stations.

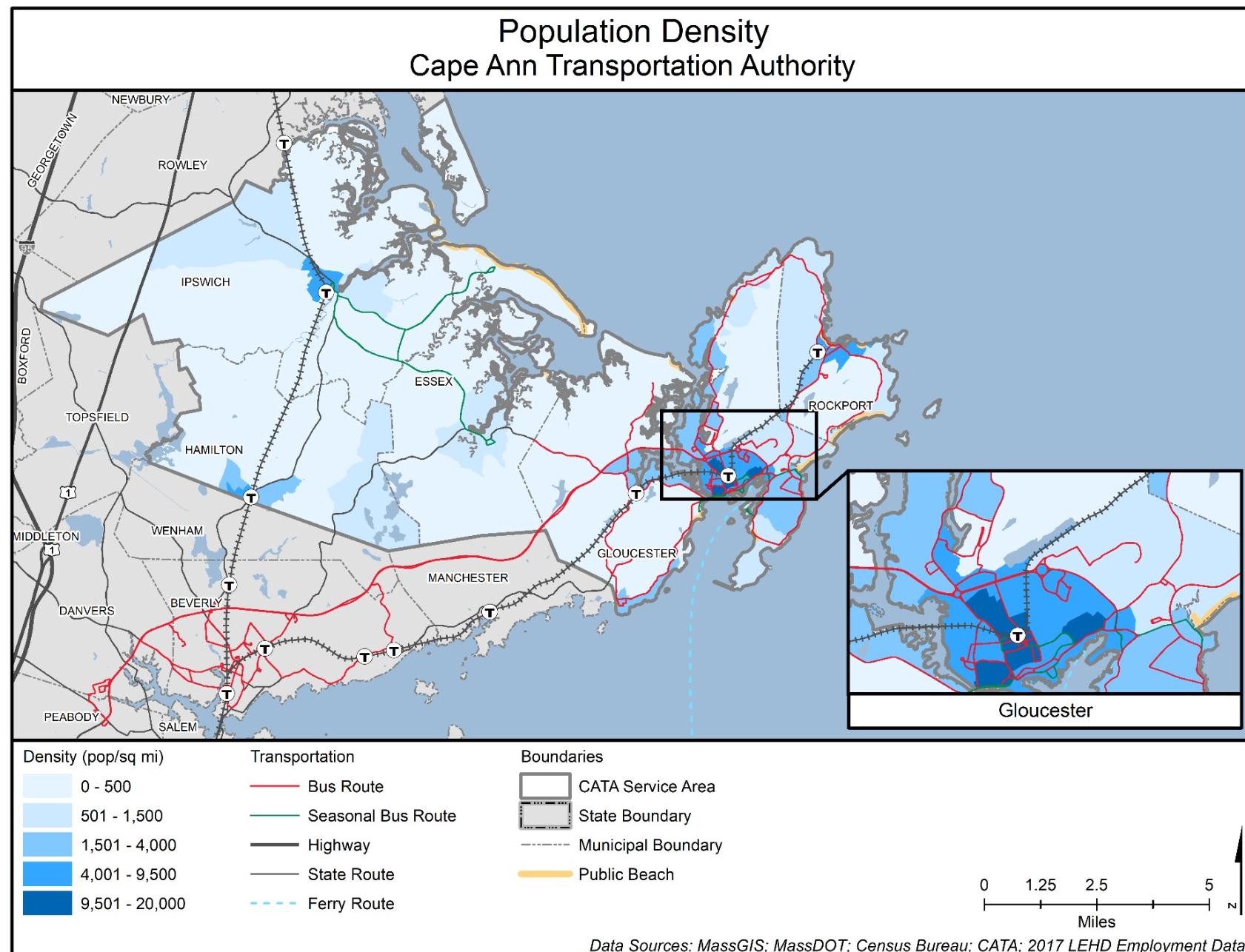
Figure 16. Population Density

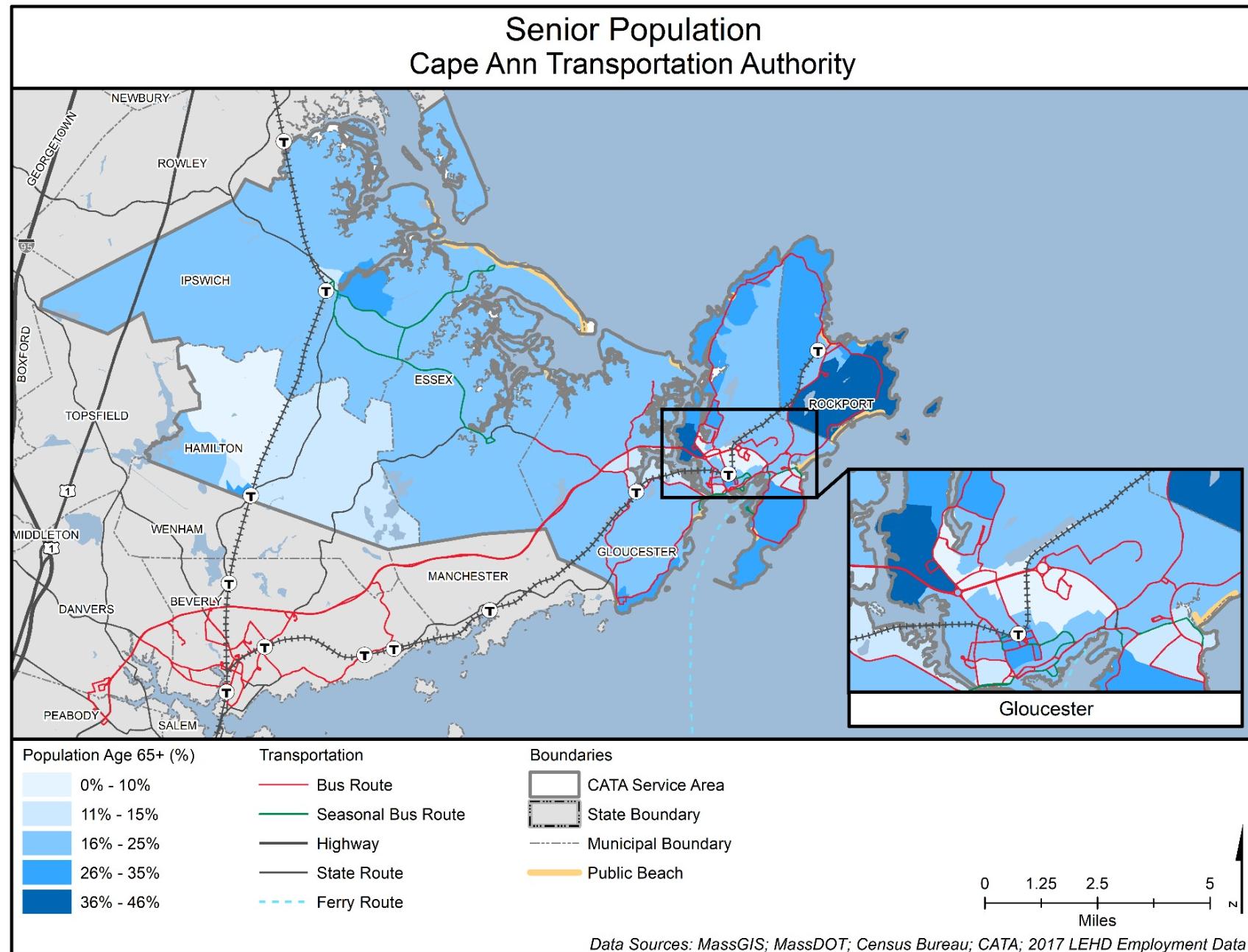
Figure 17. Senior Population

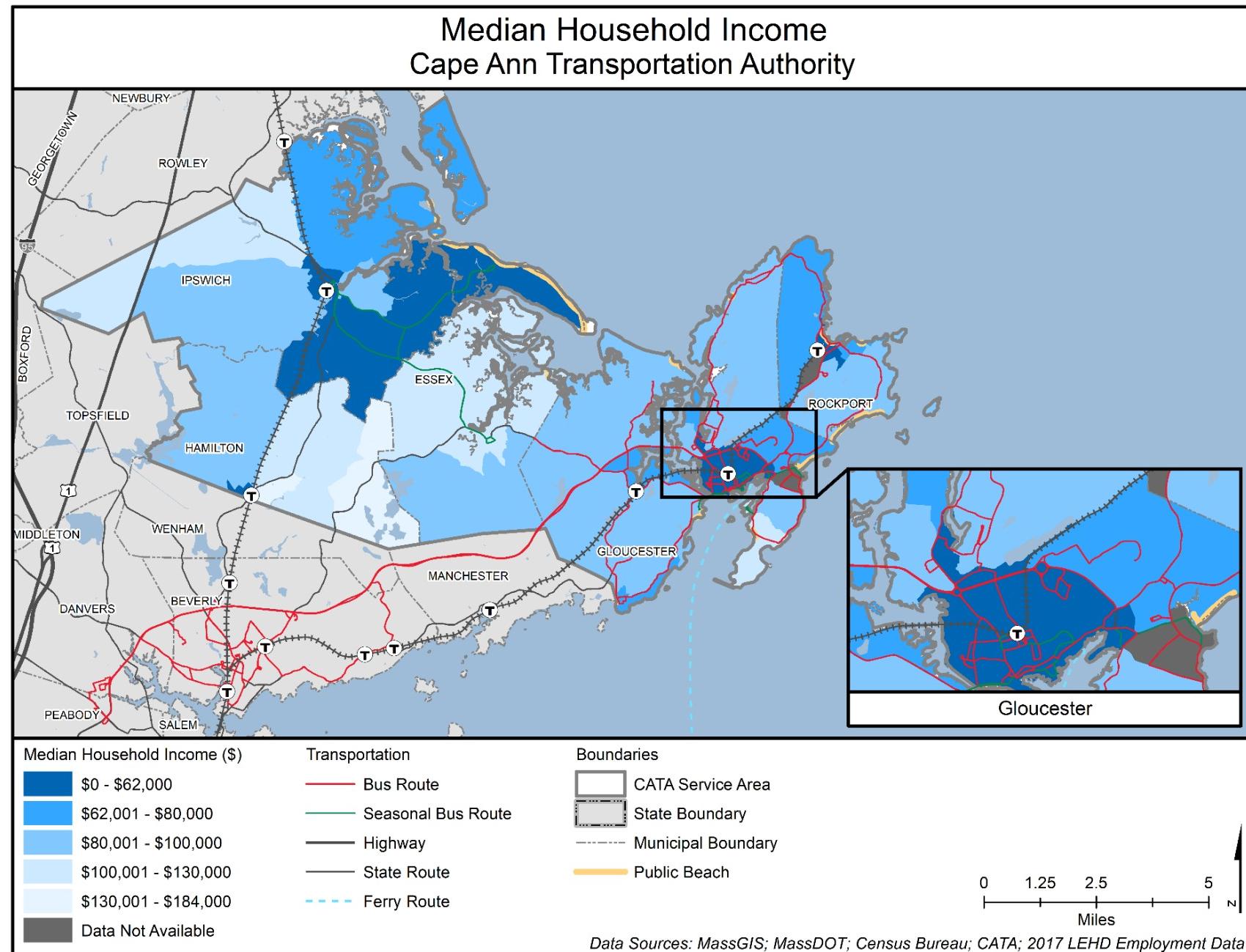
Figure 18. Median Household Income

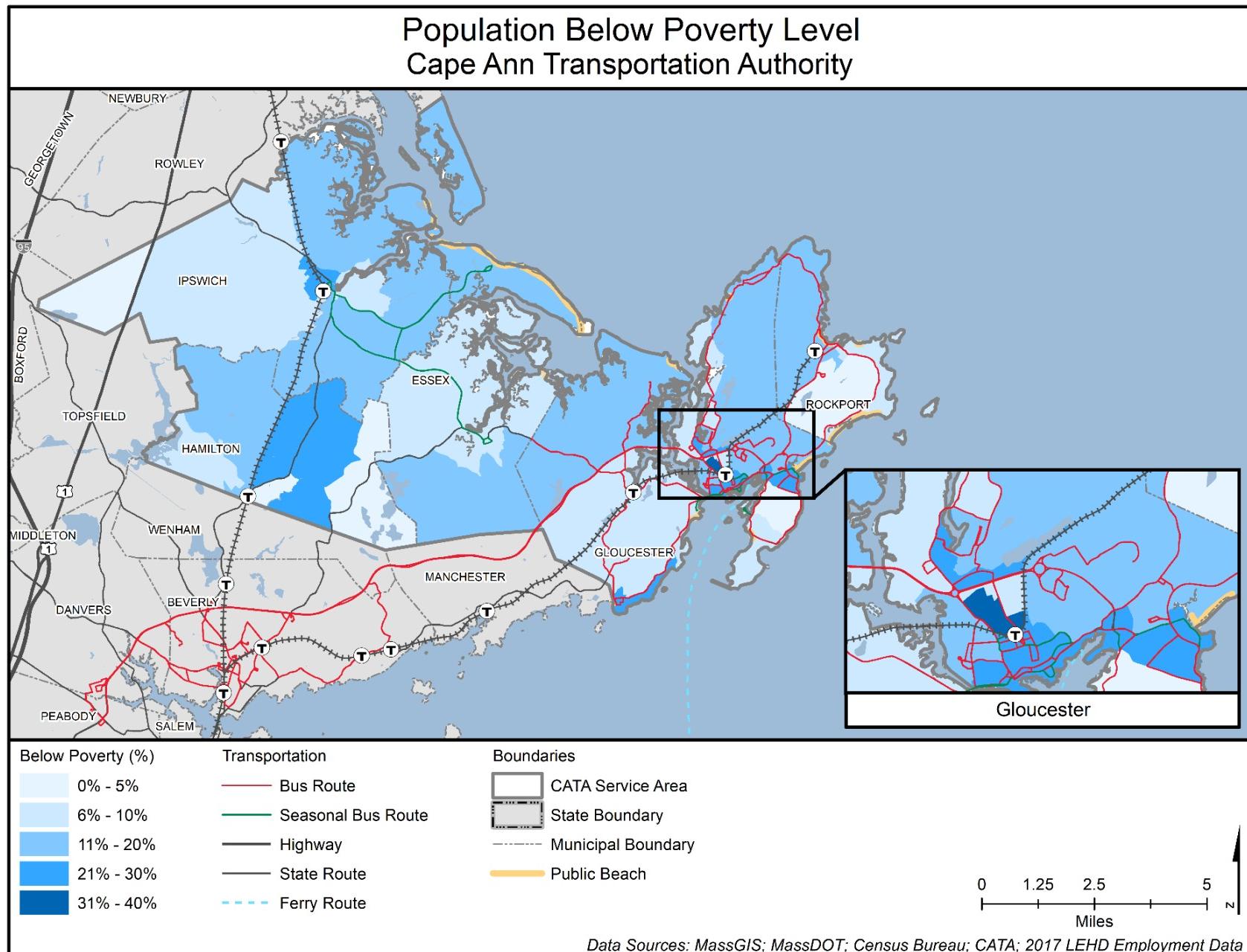
Figure 19. Population Below Poverty Level

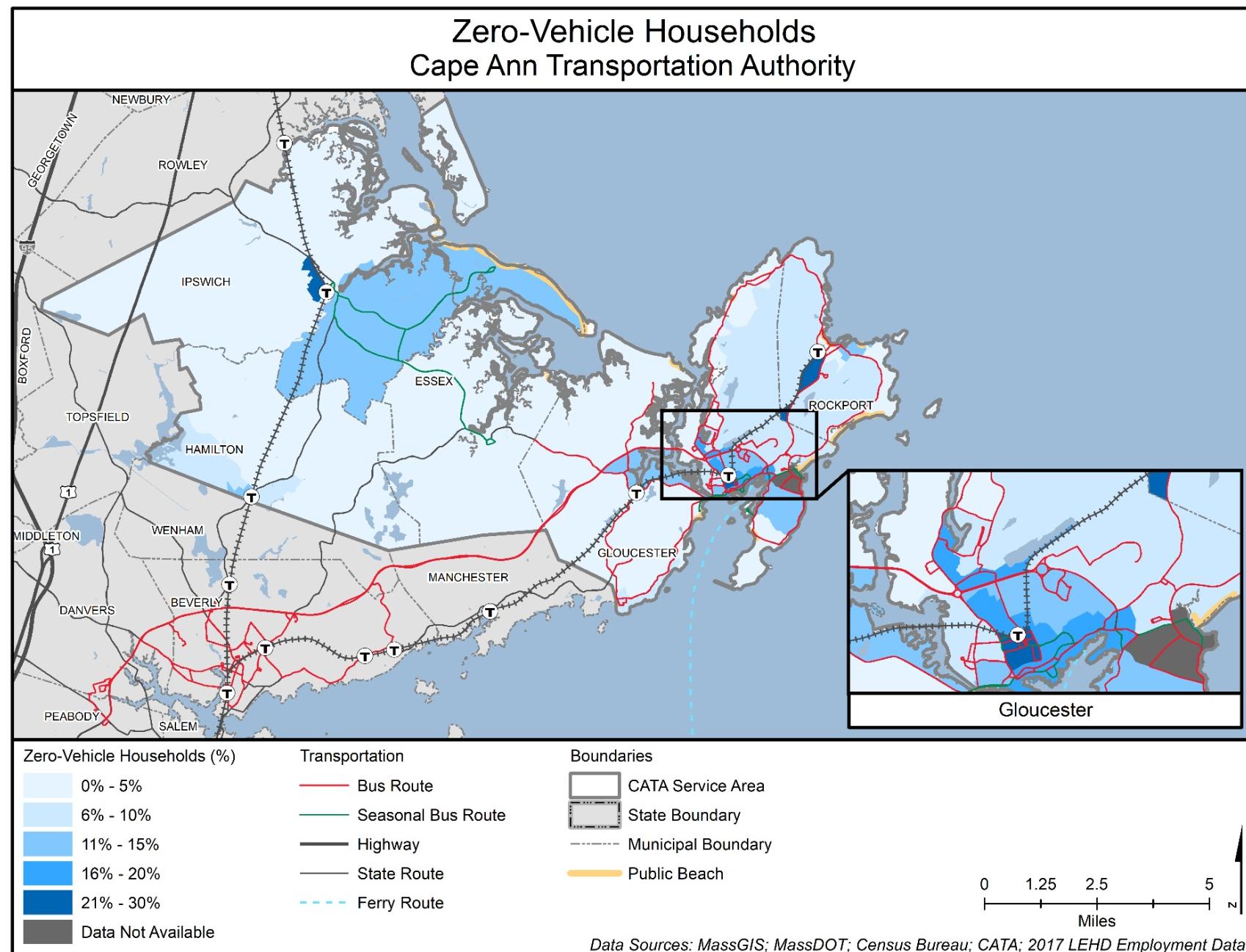
Figure 20. Zero-Vehicle Households

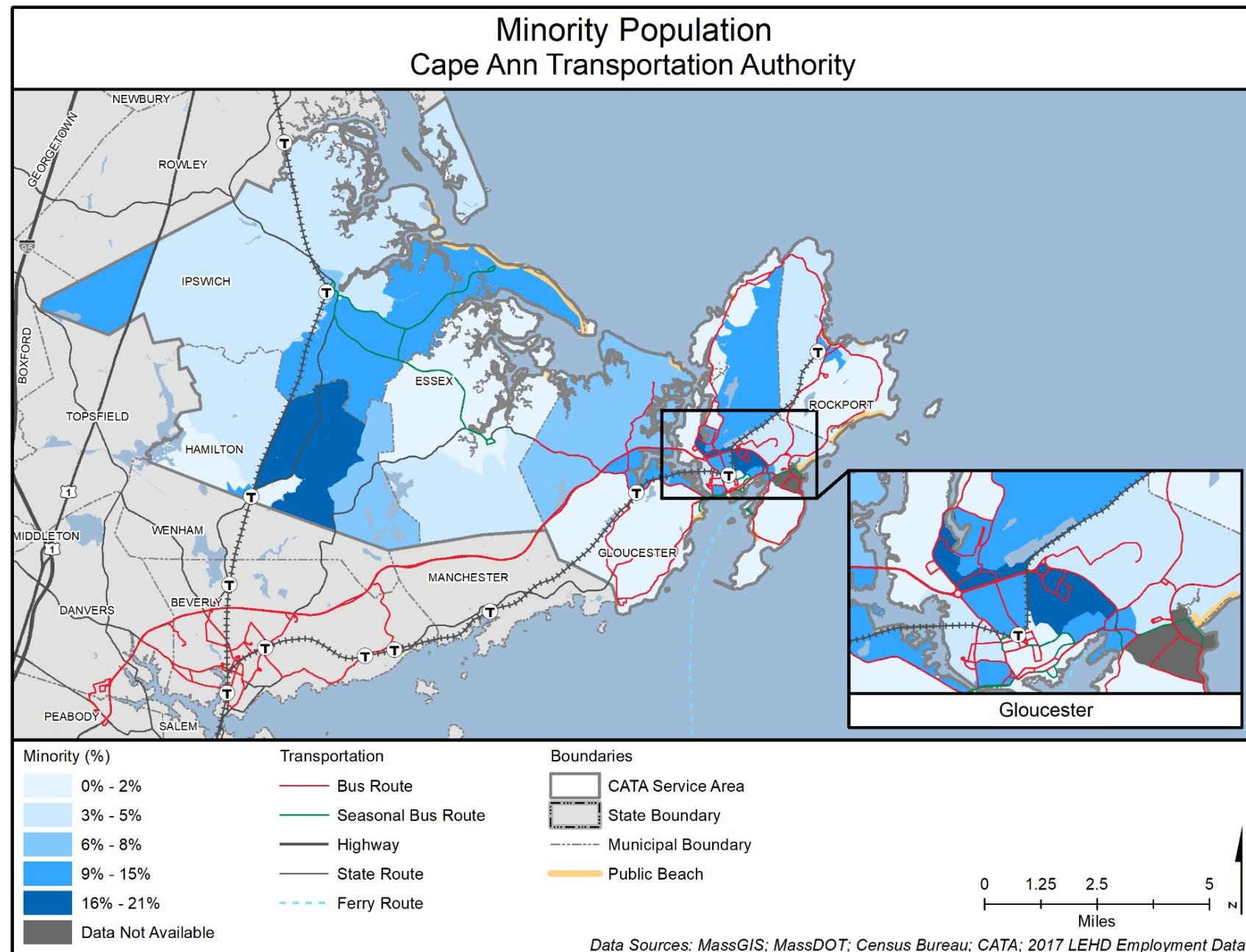
Figure 21. Minority Population

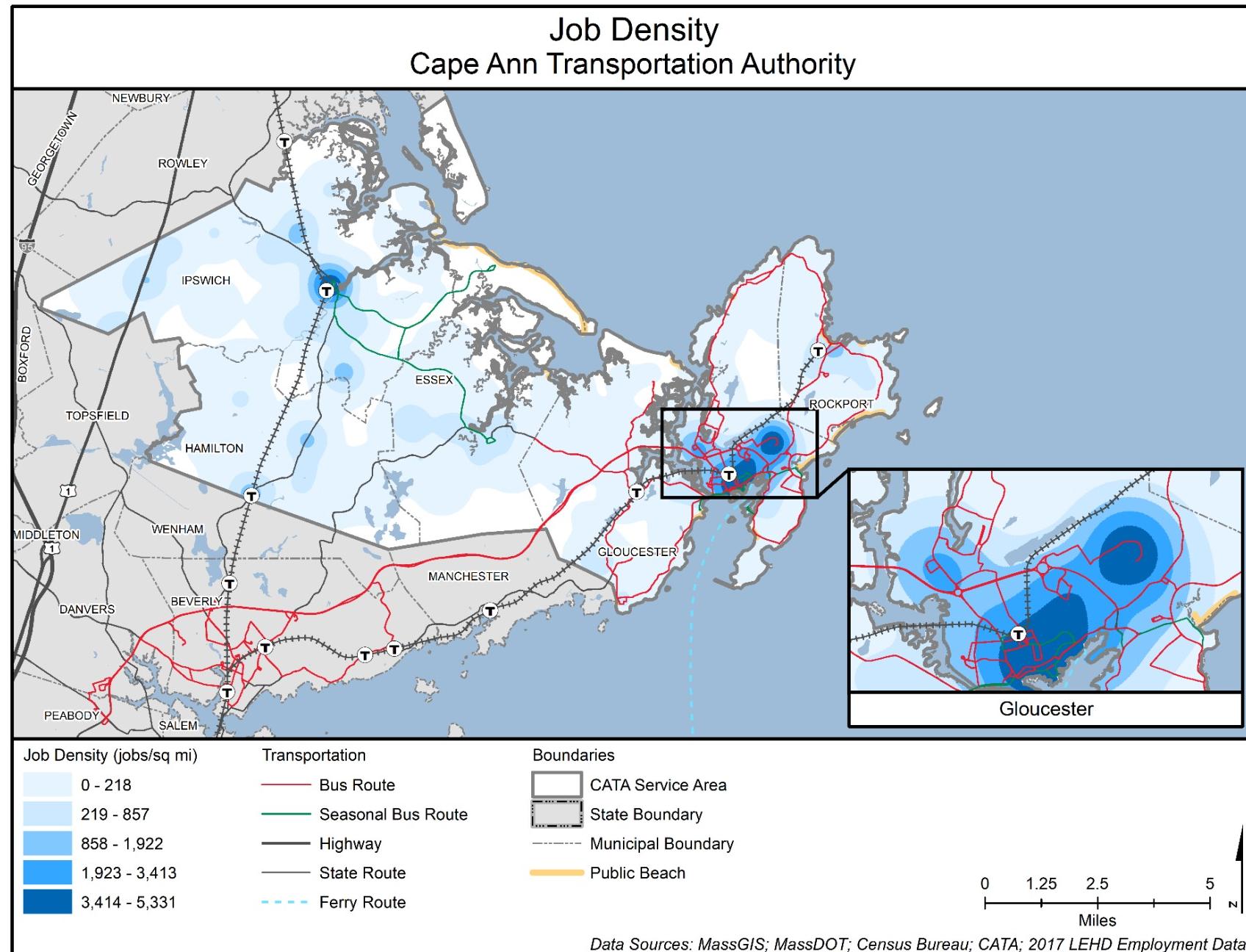
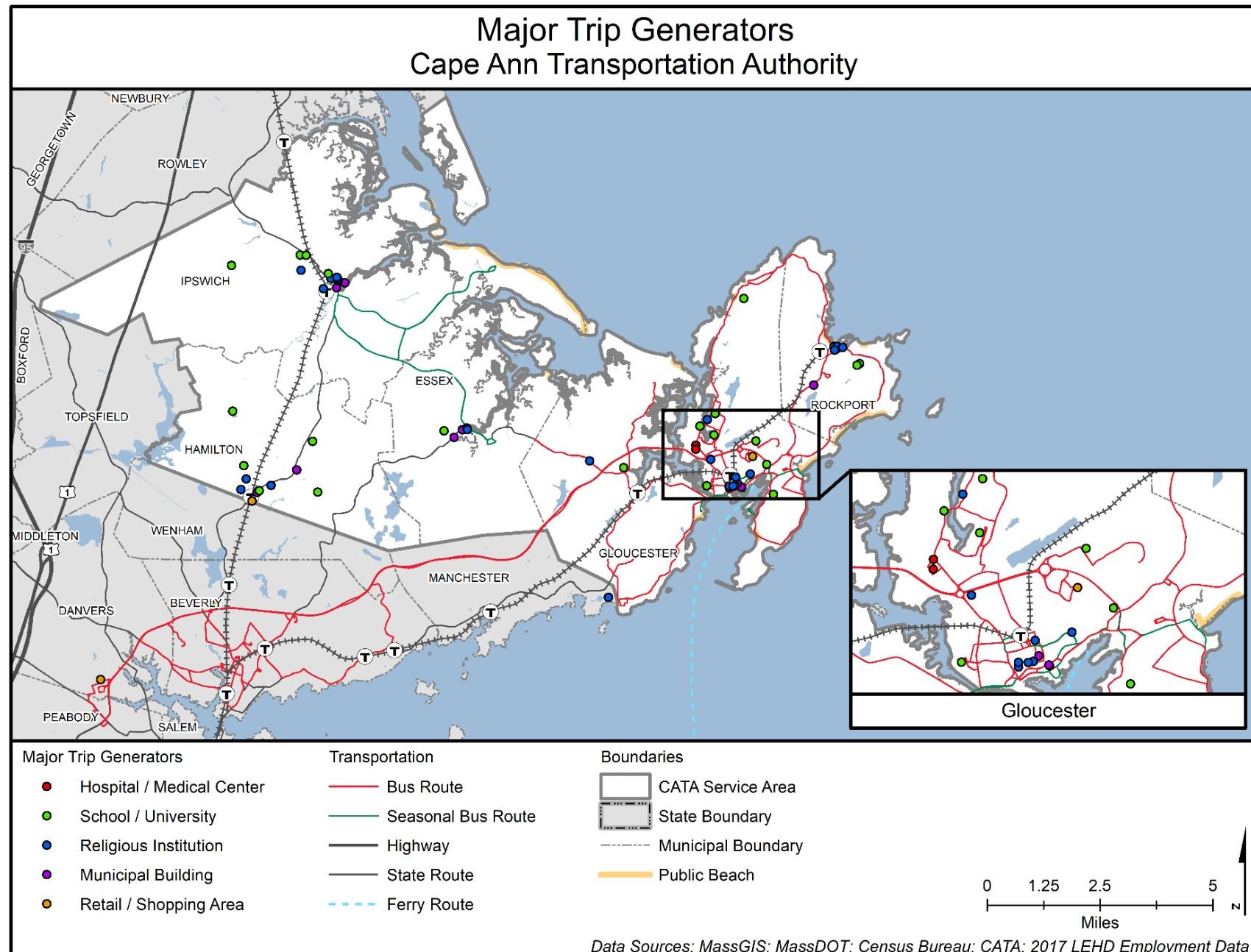
Figure 22. Job Density

Figure 23. Major Trip Generators

5.2 Transit Score

The transit score map (Figure 24) is a composite score based on many of the factors discussed in the previous section. The transit score is a relative measure of how successful a fixed route transit system is expected to be in a particular region. Used in conjunction with an analysis of major transit generators, the transit score can be used to evaluate existing service and to identify areas of potential demand.

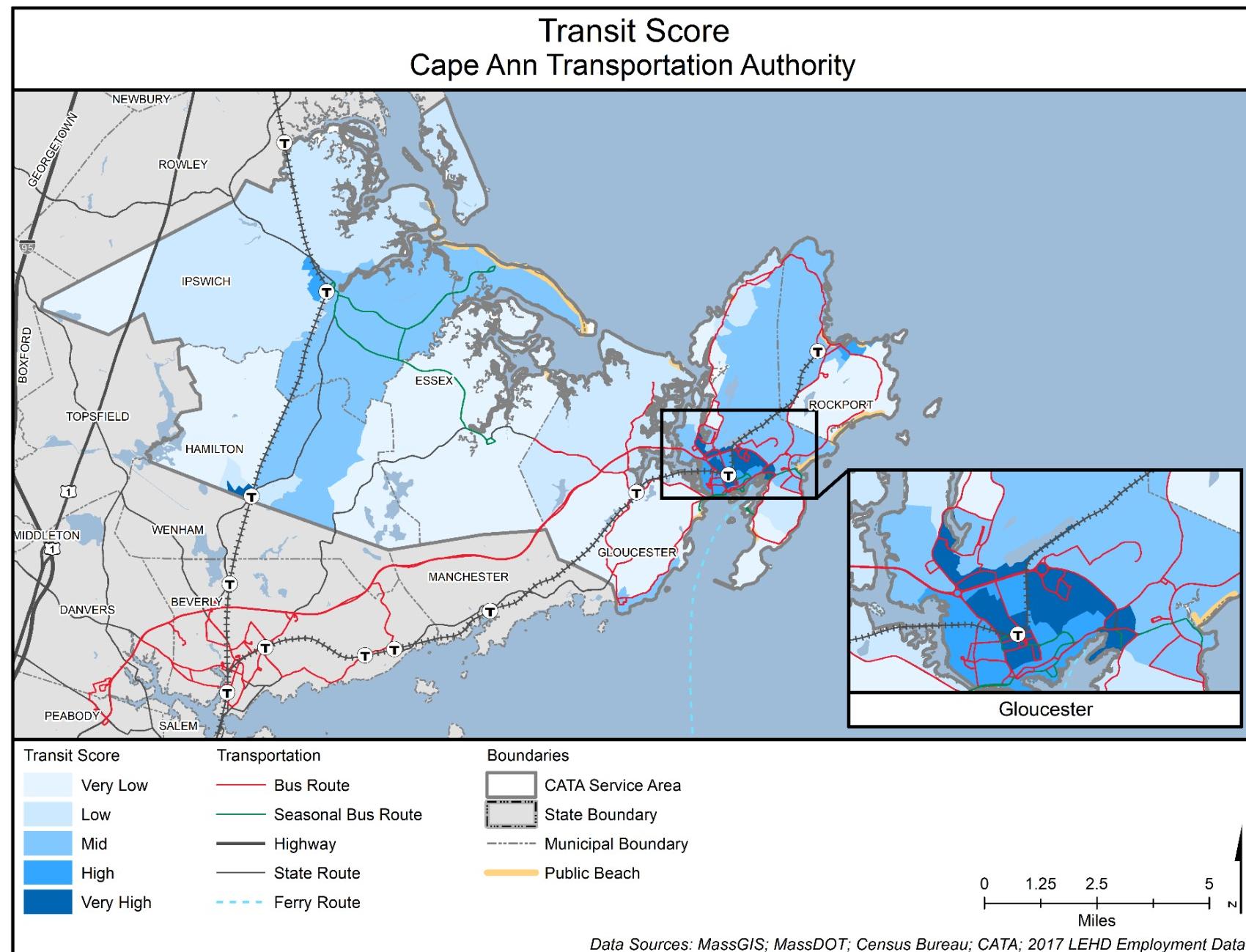
To calculate the transit score, demographic and socioeconomic information from the US Census Bureau was used for this analysis. Transit-oriented variables used for the analysis include:

- Overall Population Density
- Overall Job Density
- Density of the Population under the age of 18
- Density of the Population over the age of 65¹⁸
- Percentage of the Population Living Below the Poverty Level
- Percentage of Zero-Car Households

The composite transit score map is only suggestive of potential transit markets. Fixed route public transportation might not currently exist in areas the analysis identifies as opportunities for good reasons, including topography, roadway geometry, presence of overpasses, or other local context. However, this map does provide some insight on areas to consider for future transit expansion should the opportunity arise.

The areas identified on Figure 24 as being candidates for transit expansion are the parts of Hamilton and Ipswich that Route 1A travels through and that contain MBTA commuter rail stations, and the center of the island that makes up part of Gloucester and Rockport. It is likely that, given the proximity to the commuter rail, some of this demand is driven by residents commuting to Boston.

¹⁸ Note that the federal definition of senior as aged 65 or over is used in this case, but age in relation to transportation need is more nuanced than a strict age cutoff implies. In 2017, Governor Baker signed Executive Order 576 establishing the Governor's Council to Address Aging in Massachusetts. As part of this effort, the Council looked at different methods and solutions to create an age-friendly Commonwealth and conducted research and listening sessions across the state, during which transportation was identified as a key challenge facing older adults. Additionally, research presented from this effort showed a trend toward people staying in the workforce longer than previous generations. This research shows that the topic of transportation for older adults is one that is evolving and will require more attention in transportation planning in the future.

Figure 24. Transit Score

6. Performance

Performance-focused management is a critical priority for CATA and the Commonwealth. The federal government has also led the transportation industry to become more performance-driven in the last decade by mandating that federally funded agencies implement a performance-based approach to planning and programming. This broad emphasis on the importance of having a strong enterprise-wide, data-driven, and transparent performance management framework as the foundation for making decisions, particularly in the service planning and financial areas, is especially relevant to CATA as it works to sustain success in the face of the challenges of COVID-19 and other market uncertainties.

The purpose of this chapter is to outline CATA's current performance practices, track performance results for the CATA/MassDOT Bilateral MOU (which the Authority monitors quarterly) and make recommendations to enhance CATA's performance framework to support data-driven performance-focused decision-making. Historical performance information and a review of peer agencies are included in Appendix A.

As transit operations equipment has become more technologically sophisticated, vast amounts of operations data have become available to service providers. Providers should have data analysis strategies that ensure the data collected both inform operations planning and facilitate the RTA's reporting requirements. When evaluating existing practices and developing recommendations for new metrics, performance measures should:

- Be easily measurable with realistic, aspirational targets that will lead to successful outcomes
- Have a clear and intuitive meaning so that they are understandable to transit staff as well as non-transportation professionals
- Be acceptable and useful to transportation professionals
- Be comparable across time and between geographical areas
- Be performed on either a monthly, quarterly, or annual basis, depending on state and federal requirements and the nature of the data
- Have a strong functional relationship to actual system operations so that changes are reflected with minimal lag time in operating statistics
- Provide the most cost-effective means of data collection
- Be based on statistically sound measurement techniques
- Be consistent with measures identified for other systems
- Be readily available, when possible, to facilitate flexibility and agility in service planning
- Include actionable language, setting thresholds when additional analysis or service changes are warranted

These principles have informed the following analysis of performance recommendations and strategies, guiding the development of the recommendations at the end of this chapter.

6.1 Current Performance Measurement Practices

CATA's performance monitoring practices are detailed in the following sections. CATA's need for additional staff capacity to perform tasks including (but not limited to) research, data analysis, and performance reporting was identified in a recent organizational assessment study. While CATA conducts data analysis internally as needed, they recognize that their staff capacity limits

them from conducting regular (i.e., quarterly) reviews. CATA has identified this need for additional staff support as a priority moving forward.

6.1.1 Monthly and Annual Performance Monitoring

CATA undertakes monthly, quarterly, and annual data reporting for compliance purposes, submitting required data to MassDOT and FTA. There is an intention to expand data analysis practices contingent on staff capacity.

6.1.1.1 State and Federal Monitoring Requirements

Besides using performance monitoring to inform service planning, CATA is required to report a variety of performance metrics to both FTA and the Commonwealth on a monthly, quarterly, and annual basis as part of their funding agreements. FTA requires transit providers that receive federal funding to submit data (including service, financial, and asset inventory and condition) both monthly and annually to be posted on the National Transit Database (NTD).

The Commonwealth also requires CATA and other RTAs to report service and asset data through the state's GrantsPlus system. The Commonwealth has taken other steps in recent years to promote industry best practices, including a more data-driven approach to service planning. In 2019, MassDOT convened a stakeholder group, including RTA administrators, to develop a performance measurement strategy that could be tailored to each RTA's needs and challenges. The results of this effort were laid out in individual MOUs signed by MassDOT and the RTA administrators.

6.1.1.2 Additional Monitoring Practices

CATA currently undertakes additional performance monitoring beyond what is required on an ad hoc basis. As identified in a recent organizational study, CATA has significant staff capacity gaps in the ability to collect, organize, and analyze data beyond these foundational requirements. CATA intends to work with its Advisory Board to implement this study's recommendations and strategically expand capacity for performance monitoring.

6.1.2 Performance Metrics and Targets from MassDOT Memorandum of Understanding

In August 2019, CATA, along with the Commonwealth's 14 other RTAs, entered into 2-year MOUs with MassDOT. This agreement is based on performance metrics established by MassDOT and the RTAs, and includes performance targets in the categories of ridership, customer service and satisfaction, asset management, and financial performance. The MOU states that CATA's performance is to be measured by comparing established baselines to FY 2020 and FY 2021 targets.

The performance measures included in the MOU, along with their baselines, targets, and CATA's progress through the end of FY 2020, are included in Table 11 and Table 12. Given that the pandemic did not significantly impact operations until the last two weeks of the third quarter, the data suggest that CATA appeared to be on track to meet some of these goals before transit operations were interrupted.

When developing performance targets, it is typical to take into account external factors that are influencing performance, but it is not common practice to consider unforeseen disruptions that have the potential to greatly upset the status quo, like COVID-19. When CATA and MassDOT developed the performance targets in the MOU, they developed baselines against which to measure CATA's performance between FY 2019 and FY 2021. With few exceptions, these baselines are averages of data collected in FY 2016 to FY 2018. MOU targets reflected the

reasonable expectation that CATA could improve upon these baselines for the next 2 years. Since the outbreak of the pandemic, all parties acknowledge that meeting ridership and service efficiency goals is no longer realistic.

CATA and MassDOT will continue to review MOU performance results through the term of the agreement and will mutually utilize this data to inform agreements for FY 2022 and beyond. CATA will use FY 2021 as a time to reevaluate targets and performance metrics as transit demand stabilizes and CATA and MassDOT continue to discuss how to best reflect the impact of the pandemic on ridership, operations, and efficiency. This is discussed in greater detail below.

6.1.2.1 Service Effectiveness Measures

The following performance measures are calculated on a monthly and annual basis using farebox data, passes sold, bus driver tabulations, schedules, operations data recorded by drivers and dispatchers, and AVL technology installed on buses.

- **Total Ridership (Unlinked Passenger Trips):** This measures passenger trips taken on CATA vehicles (transfers count as individual trips, rather than one multi-segment trip). These data are collected from CATA's fareboxes.
- **Unlinked Passenger Trips per Vehicle Revenue Hour:** This is calculated by the number of total trips divided by the corresponding revenue hours. Revenue hours are calculated by using a template that CATA's operator developed. Operated and scheduled vehicle revenue hours are very similar, with a few exceptions due to weather or mechanical issues. The template has been in use for many years for NTD reporting and is reviewed by CATA when schedule changes are implemented.
- **On-Time Performance:** This measures the percentage of fixed route trips that operate late or are missed. CATA currently reports buses that leave 1 minute earlier than scheduled or up to 5 minutes later than their scheduled departure times from their bus garage as being on time. CATA has begun conversations with its AVL vendor to pursue automated on-time performance measurement methods. One of CATA's "stretch-goals" from MassDOT was to develop a new on-time performance metric for FY 2021.

Table 11. MOU Service Effectiveness Measures

Operating Statistic	Baseline (FY 2016–FY 2018 Average)	Target FY 2020	FY 2020 (First Quarter–Third Quarter)	FY 2020 (Full Year)
Total Ridership (Unlinked Passenger Trips)				
Fixed Route	192,864	198,650	146,165	167,502
Demand Response	29,116	29,989	22,084	24,377
Systemwide	221,980	228,639	168,249	191,879
Unlinked Passenger Trips per Revenue Hour				
Fixed Route	13.38	14.15	10.80	8.46
Demand Response	3.11	3.04	2.51	3.09
Systemwide	9.63	9.57	7.54	6.38

Operating Statistic	Baseline (FY 2016–FY 2018	Average)	Target FY 2020	FY 2020 (First Quarter–Third Quarter)	FY 2020 (Full Year)
On-Time Performance					
Systemwide	100%	100%	Data not available at the time of report drafting	Data not available at the time of report drafting	Data not available at the time of report drafting

Source: CATA and MassDOT MOU (2019), CATA

6.1.2.2 Financial Efficiency Measures

These measures are calculated on a monthly and/or annual basis using data from fare payment machines, fareboxes, pass sales, contracted service agreements, schedule data, and operations data recorded by drivers and dispatchers.

- **Farebox Recovery Ratio:** This metric is the percentage of operating costs covered by fares, calculated by the fares collected divided by the cost to operate the route. CATA does not collect revenue data by route, so this measure is only available by mode.
- **Operating Expenses per Revenue Hour:** This is the cost of service divided by revenue hours.

Table 12. MOU Financial Efficiency Measures

Operating Statistic	Baseline (FY 2016–FY 2018	Average)	Target FY 2020	FY 2020 (First Quarter–Third Quarter)	Target FY 2021
Farebox Recovery Ratio					
Fixed Route	8.97%	9.11%	7.39%	5.48%	
Demand Response	3.18%	3.23%	2.98%	2.44%	
Systemwide	7.24%	7.35%	6.00%	4.58%	
Operating Expenses per Vehicle Revenue Hour					
Fixed Route	\$122.69	\$124.58	\$118.55	\$110.01	
Demand Response	\$81.11	\$89.70	\$84.01	\$88.97	
Systemwide	\$106.33	\$108.45	\$104.95	\$102.81	

Source: CATA and MassDOT MOU (2019), CATA

6.1.2.3 Asset Measures

FTA has developed national standards for rating the condition of transit equipment and facilities. FTA categorizes vehicles, equipment, and facilities into asset classes and those classes have either a useful life benchmark (ULB) or a condition rating on the Transit Economic Requirements Model (TERM) scale. While FTA has default ULBs for expected service years for vehicle classes, agencies are permitted to submit their own ULBs for approval from FTA if they choose. Although the MOU lists the following asset management metrics and targets, CATA sets ULB goals for their rolling stock, equipment, and facilities in their Transit Asset Management (TAM)

Plan, while the targets for the metrics in the sections above were set in the MOU. CATA's vehicles and facility are generally in good condition (Table 13).

- **FTA Reportable Revenue Vehicles Asset Class Meeting FTA TAM Plan ULB:** This metric is the percentage of vehicles within a particular asset class that have met or exceed their ULB.
- **FTA Reportable Equipment Asset Class Meeting FTA TAM Plan ULB:** This metric is the percentage of equipment within a particular asset class that has met or exceed their ULB.
- **FTA Reportable Facilities Asset Class Meeting FTA TAM Plan ULB:** This metric is the percentage of facilities with a condition rating below 3.0 on the FTA TERM Scale.

Table 13. Condition of CATA's Vehicles and Facility

Asset Type	FTA Standard
Vehicle	ULB
Bus	0%
Cutaway bus	0%
Trolley	100%
Facility	TERM Rating
Administration Building	Good

Source: CATA

6.2 Considerations for the Next 5 Years

The following are the improvements and measures that CATA should consider implementing over the next 5 years both to aid in their navigation of the uncertainties brought on by COVID-19 and to continue in their efforts to adopt industry best practices.

6.2.1 How CATA's Market Has Been Affected by COVID-19

Months into the pandemic, Americans are still trying to understand what the “new normal” will look like. Transit providers are uncertain how many former customers will return (ridership has dropped as much as 80 percent in some systems) and what that timeline looks like. They are also grappling with how to ensure a safe workplace and retain employees as the risk associated with transit operations (and driving a vehicle in particular) has increased significantly since March 2020.

Since the outbreak became widespread in Massachusetts in mid-March 2020, many institutions and industries that fuel the region’s economy, and therefore CATA’s ridership, have been severely altered for the foreseeable future. Some of the most significant include:

- Virtual classes at the region’s public schools
- Decline in customers and workforce at restaurants and bars
- Decline in summer tourism industry jobs

The north shore of Massachusetts, where CATA is located, typically sees thousands of people visiting the region’s restaurants, hotels, and resorts every summer, contributing significantly to area employment and the local budgets that contribute a significant portion of CATA’s funding.

As the timeline for eradicating the virus is extremely uncertain (social distancing may continue into 2021), CATA will need to be flexible in their ability to adjust service according to demand and funding availability. Access to ridership data that are detailed and readily available is imperative to CATA's ability to both maintain lifeline service and transport essential workers.

6.2.2 Staff Capacity for Performance Analysis

A recently completed organizational assessment found CATA's administrative staff was substantially smaller than most peer organizations. CATA's lack of staff capacity makes it difficult for CATA to carry out required tasks, including data analyses on regular intervals, that are needed to inform service planning and keep up with required performance reporting. The assessment recommended that CATA hire additional staff to perform data analysis, along with other duties.

If CATA does not hire additional staff, this need could also be filled by working with MassDOT and other RTAs to create a position for a statewide transit analyst dedicated to assisting RTAs with data analysis. This position would help with gathering, analyzing, and reporting data to the relevant oversight entities, such as FTA and MassDOT. Increased staff capacity would also support CATA in their efforts to make more data-driven decisions through data organization and increased analysis (e.g., quarterly reports).

6.2.3 Data-Driven Evaluation

While the ability to access reliable up-to-date data was important prior to the pandemic, it is now essential that CATA has the tools needed to make informed service changes in a nimble way. These tools include technology like automatic passenger counters (APC) and AVL, which, when combined, allow agencies to analyze ridership at the bus stop level, identifying new ridership patterns and adjusting service accordingly. Because these data are rich with information about a system's travel patterns and are readily available, they are invaluable when considering service changes—particularly when those changes need to respond to a dynamic on-the-ground ridership landscape.

CATA does not currently produce any regular internal performance reports, and it is recommended that CATA move toward this industry best practice as soon as feasible. Increased staff capacity would allow for progress on performance monitoring efforts such as digitizing and automating data collection and analysis.

CATA does not currently have APCs installed on their vehicles, but is interested in acquiring them for its fleet, pending opportunities for procurement. CATA does have AVL technology installed on their buses. CATA has recently been working with the company that developed AVL to track their on-time performance more accurately. As noted above, developing a new on-time performance metric to replace the existing "Out of the Barn" metric is one of the stretch goals in CATA's MOU with MassDOT.

In addition to organizing the data associated with their AVL technology, CATA should create actionable guidelines for the performance metrics they regularly report, as post-pandemic ridership stabilizes. Thresholds for the following route-level metrics were recommended in CATA's 2015 RTP (key metrics are in bold):

- **Passengers per hour**
- **Subsidy per passenger**
- **Farebox recovery ratio**
- Cost per revenue hour
- Late trips

- Service/road calls
- Accidents per 100,000 miles

The 2015 RTP recommended that routes that failed to meet thresholds for at least two out of the three main indicators (passengers per hour, subsidy per passenger, or farebox recovery) should be evaluated for possible modification. As post-pandemic ridership stabilizes, implementing thresholds for when actions like more extended analysis or service changes are warranted would simplify service planning and boost transparency if CATA shared the guidelines with the public.

6.2.4 Public Transparency

CATA's website includes an "Open Government" page, which includes an expense reporting system, audits, payroll information, and annual financial statements. Currently, CATA does not provide performance reports for public viewing on their website. CATA plans to post public performance reports once a revamped website is launched. It is recommended that CATA prioritize developing quarterly and annual performance reports to be used for service planning purposes, with a simplified version that is shared with the public on CATA's website to increase transparency. CATA should consider the following options for presenting operating statistics on the CATA website:

- **Static PDF:** Key operating statistics can be formatted in Microsoft Word or a similar word processing tool and then saved as a static PDF file.
- **Tableau:** One platform for providing key service statistics that should be considered is Tableau. This is an easy-to-use data visualization platform that allows the public to interactively explore operational data.

If feasible, CATA should also include the option to download raw data from the website, making the data easy to access so that analysis can be included in efforts to educate the public, academic studies, or planning studies.

6.2.5 Measures to Consider Including in Internal Performance Reports

As CATA expands its staff capacity as recommended in its recent organizational assessment, CATA should consider using the following measures for internal tracking purposes and to drive the evaluation of performance. Most of the metrics can be looked at on a quarterly and annual basis. CATA will analyze metrics involving financial performance annually to ensure that the data match what is in their annual audit.

- **Mode-Level Performance**
 - **Passengers per Revenue Mile:** This statistic is the number of total unlinked passenger trips divided by the corresponding revenue miles. It is recommended for quarterly and annual reports.
 - **On-Time Performance:** MassDOT and CATA have agreed to update CATA's method for measuring on-time performance. CATA currently reports buses that leave 1 minute earlier than scheduled or up to 5 minutes later than their scheduled departure times from their bus garage as being on time. One of CATA's stretch goals from MassDOT was to develop a new on-time performance metric for FY 2021. It is recommended for quarterly and annual reports.
 - **Percentage of Cash Fare Passenger:** This is an internal measurement to track CATA's progress at encouraging customers to transition from cash fare payments. It is recommended for annual reports.

- **Cost per Passenger:** This metric is the overall cost to operate service divided by the number of passengers. It is recommended for annual reports.
- **Subsidy per Passenger:** This is calculated as total expenses minus fare revenue divided by ridership. It is recommended for annual reports.
- **Valid complaints per 100,000 miles:** This is used to assess the quality of customer service. It is recommended for quarterly and annual reports.
- **Denied Trips (Fixed Route):** This is the number of passengers left behind due to vehicle overload. This is recommended for quarterly and annual reports.
- **Route-Level Performance**
 - **Ridership:** This is the number of passenger trips broken down by route. This should be included in quarterly and annual reports.
 - **On-Time Performance by Route:** This measure is the percentage of fixed route trips that operate late or are missed. CATA has had discussions of automating this reporting through CATA's AVL system. The recommended standard for late trips is any trip that is more than 5 minutes behind schedule, and any trip that leaves before the scheduled time is considered early. It is recommended for quarterly and annual reports.
- **Ridership by Stop:** This measures passengers boarding and disembarking by stop. The technology associated with this data collection (APCs and AVLs) and supporting software can generate reports quickly for any time period requested and includes data that can assist in looking at the data spatially and by time of day. Stop-level ridership data are especially important in the context of a shifting transit market (due to the pandemic) to understand how ridership demand has changed where data are available. This metric is only feasible once APCs have been installed, and is recommended for annual reports.

6.2.5.1 Service Guidelines

One of the critical performance metrics that CATA should utilize as ridership stabilizes in the wake of the pandemic is service guidelines. Service guidelines provide context for evaluating route-level performance. There are two approaches that CATA can take to establish guidelines: creating goals based on route type or comparing route-level performance to the system average or route category average. It is recommended that one system of guidelines be included in quarterly and annual reports:

- **Route Performance by Route Type:** Routes should be defined by the function they serve in order to accurately measure the health of a route. CATA's 2015 RTP described four route types that CATA could use to classify their routes when comparing route-level performance: (1) Fixed, (2) Tripper, (3) Commuter, and (4) Seasonal. When establishing guidelines for these categories, CATA should consider the geography and primary market served. For reference, the 2015 RTP recommended that CATA use passengers per hour (except for commuter routes) to measure route performance and set the following 2015 passenger per hour targets for each route type:
 - **Fixed Routes:** 10 passengers per hour
 - **Trippers:** 12 passengers per hour
 - **Commuter Routes:** 10 passenger per trip
 - **Seasonal Routes:** 5 passengers per hour

These thresholds should be reevaluated once ridership has stabilized post-pandemic.

- **Route Performance by System Average or Route Category Average:** In this approach, routes are compared to the system or route category average and placed into three tiers based on their performance. This approach is ideal in this period of destabilized ridership, as the system and route category averages are fluid, reflecting the instability in the market. Recommended tiers for route performance include:
 - **Pass:** Productivity measure is greater than 50 percent of the systemwide or route category average and no corrective action is necessary.
 - **Monitor:** Productivity measure is less than 50 percent of the systemwide or route category average but greater than 35 percent of the average; performance should be monitored and a corrective plan is developed.
 - **Fail:** Productivity is less than 35 percent of the systemwide average; the corrective plan is implemented.

CATA should also look at ridership year-to-year using standard deviation to determine whether changes in a route's ridership are significant. External factors that may have affected ridership (i.e., reduced school enrollment if school is a trip generator) should also be considered. This analysis should be an integral part of CATA's service planning.

7. Stakeholder Engagement

Engaging the public is an essential element of a successful 5-year plan. Planning efforts should be driven by the needs and preferences of transit customers, major regional employers, institutional partners (such as higher education), municipal officials, human service organizations, and other stakeholders. This chapter outlines the results of the public outreach gathered through an online stakeholder survey as part of this 5-year CRTP.

7.1 Stakeholder Survey

The stakeholder survey was available online and ran from June 10 through July 31, 2020. To promote the survey to its riders, CATA sent email blasts with survey information to stakeholder groups and posted a link on CATA's website.

7.1.1 Survey Approach and Limitations

Due to social distancing guidelines and other safety protocols resulting from the COVID-19 pandemic, no in-person outreach could be conducted. Thus, the bulk of the outreach effort rested on an online stakeholder outreach survey conducted in the early summer of 2020. The project team developed an online survey using the SurveyMonkey platform (Figure 25).

Figure 25. Survey Landing Page



Cape Ann Transportation Authority (CATA) Survey

We want to know what you think! CATA is updating their Regional Transit Plan in order to create a vision for the next five years and prioritize service improvements. As a valued CATA customer, your feedback is essential to our service and is a key ingredient in our recipe for success. Please take five minutes to complete this survey to help us make CATA the best service it can be!

OK

With these limitations in mind, the project team worked with vigilance to ensure that the broadest possible cross-section of CATA's stakeholders was represented. This included extensive online outreach through the CATA website and coordination with partner organizations through their online outlets. A series of email blasts with links to the survey were sent to stakeholder groups, major employers, community partners, local chambers of commerce, and local municipalities to share with the public. The survey was designed to be mobile-friendly and did not require someone to have access to a computer to fill it out. The survey link was accompanied by a QR code to enable a quick scan using a smartphone, which directed to the survey. Additionally, flyers with information available in English and Spanish were printed and shared by drivers on all vehicles.

Due to the limitations imposed by the COVID-19 pandemic and the resulting all-online outreach effort, the findings of this survey are not a statistically representative sample of CATA's ridership or the region's residents. Rather, the findings from this effort serve as a guide for potential improvements that will be considered in the context of other planning and outreach efforts.

7.1.2 Survey Design

There were two primary groups of stakeholders targeted in this surveying effort:

- **Current riders:** As users of the system, current riders are an essential group to understand travel patterns and public transportation mobility needs for the region.
- **Non-riders:** CATA is committed to growing the base of riders in the region, and as such wanted to hear from people who do not use the system.

The survey created tracks for each of these groups to provide feedback, which are summarized below.

7.1.3 Limited English Proficiency Outreach

In accordance with CATA's commitment to ensuring inclusion of people with limited English proficiency (LEP), and in a context in which in-person outreach was not feasible, the study team took special care to reach out to organizations that regularly interact with people with limited English abilities. The project team implemented a targeted outreach campaign where community groups working with LEP populations were reached via email. Additionally, the survey was available in English and Spanish. The partner organizations in Table 14 were contacted to raise awareness about the survey.

Table 14. Partner Organizations Contacted for Survey Distribution

Organization	Organization
Action Inc.*	Hamilton Senior Center / Council On Aging
Addison Gilbert Hospital	Ipswich Chamber of Commerce
Advisory Board Chair-Gloucester	Ipswich Local News
Advisory Board Clerk	Ipswich Senior Center / Council On Aging
Beverly Hospital	Local Union (Drivers, Mechanics)
Cape Ann Chamber of Commerce	Mass Rehab
Cape Ann Transportation Authority	MassHire North Shore Career Center – Gloucester*
CATA Legal Counsel	Operating Company
Catholic Community of Gloucester & Rockport*	Rockport Friends and Residents (public Facebook page)
City of Gloucester	Rockport Senior Center
City of Gloucester Health Department and Mass in Motion	SeniorCare Inc.
Essex MA -- Notices and Issues (public Facebook group)	The Open Door*

Organization	Organization
Essex Senior Center / COA	Town of Essex
Gloucester COA (Rose Baker Senior Center)	Town of Hamilton
Gloucester Daily Times	Town of Ipswich
Gloucester Friends of COA	Town of Rockport
Gloucester Housing Authority*	Visit Essex MA

*Indicates a community group that works with LEP populations.

7.1.4 Survey Results

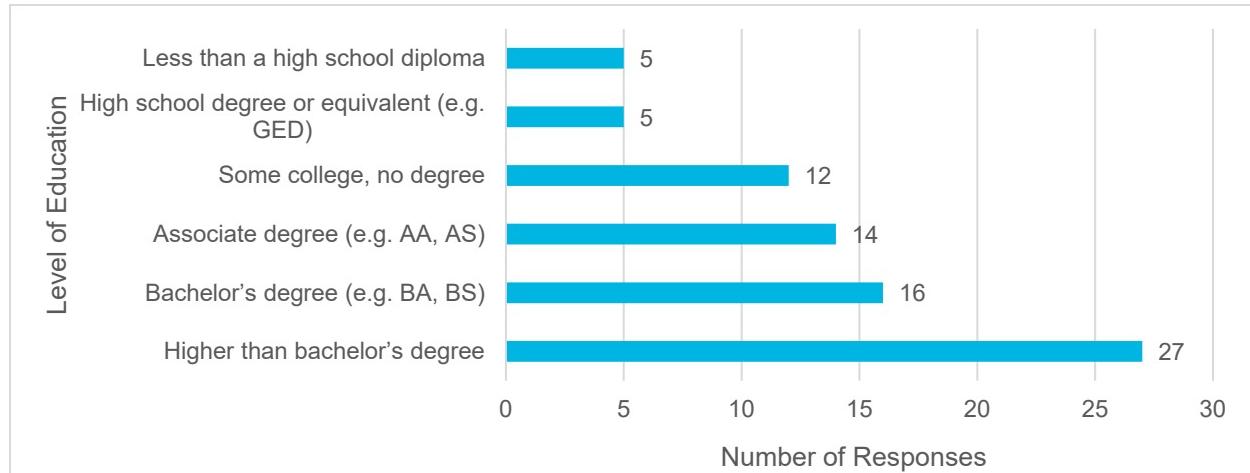
The survey captured 117 responses: 75 completed surveys and 42 partial responses, all of which were in English. The responses are summarized below and separated into the following groups: current CATA fixed route (bus) riders, non-riders, and current riders of both fixed route and wheelchair accessible vans (demand response). Responses to specific questions that were blank were likely the result of immediate abandonment of the survey due to a time constraint, technical problem, or user error. Of the respondents who indicated which mode of transit they used, there were:

- 13 current CATA fixed route (bus) riders
- 9 current riders of both fixed route and wheelchair accessible vans (demand response)
- 69 people identified as non-riders
- 26 people did not answer this question but responded to other portions of the survey

7.1.4.1 Demographics

In general, survey respondents tended to be older adults who identified as White, with a relatively high proportion of women responding. The average age of survey respondents was 76—this is likely due in part to the active senior community in Cape Ann that assisted in survey outreach. The majority of respondents (72 percent) identified as female; 27 percent identified as male, and 4 percent as non-binary.

In terms of race/ethnicity, one respondent identified as American Indian or Alaska Native and the rest of respondents who answered this question identified as White/Caucasian. All the respondents indicated English was their primary language at home. Respondents tended to be college-educated, with 72 percent indicating having received a post-secondary degree (Figure 26).

Figure 26. All Respondents: Highest Level of Educational Attainment

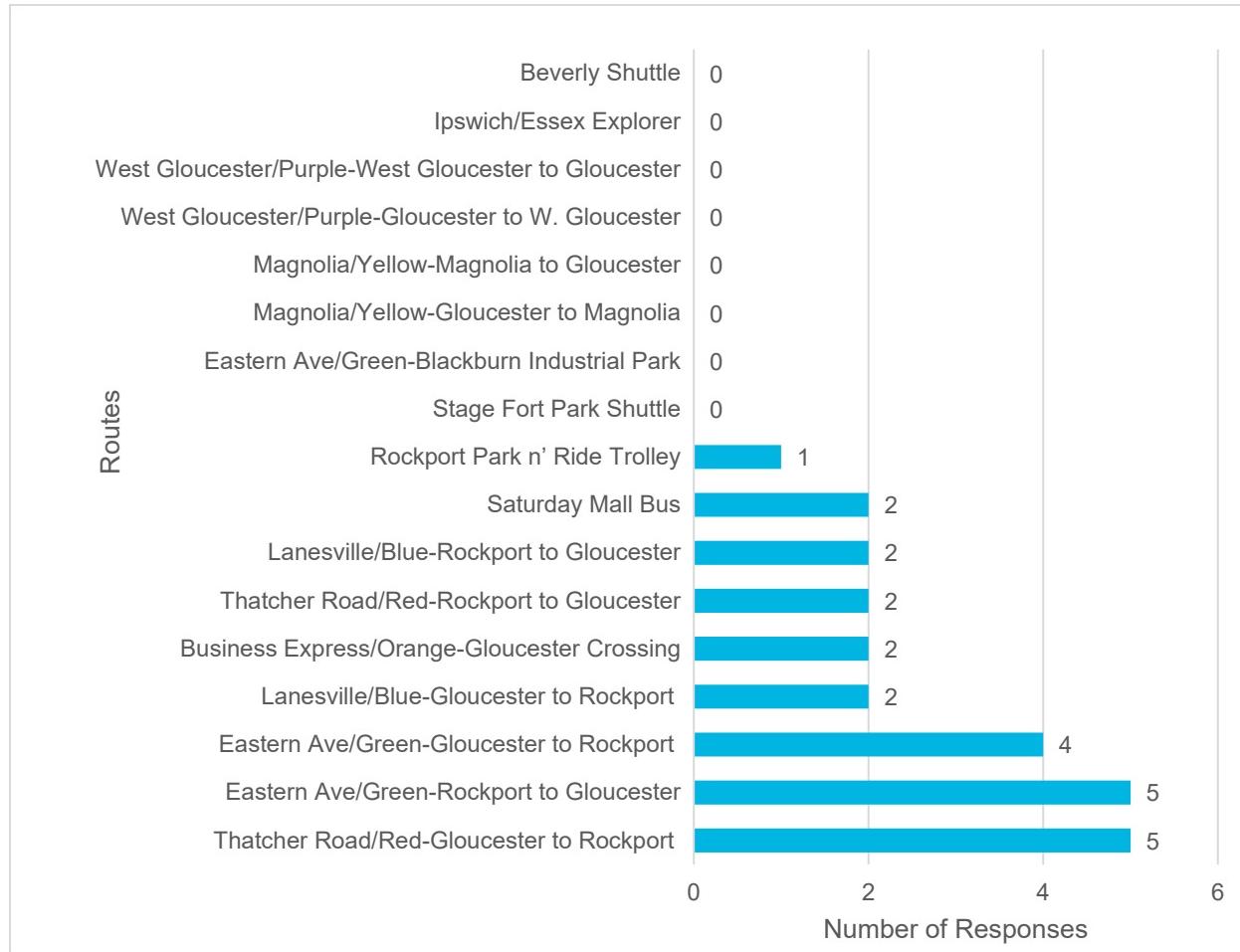
n=79

7.1.4.2 Current Service/Ridership Profiles

Despite Gloucester being the center of CATA's operations, fewer than half of respondents indicated living in Gloucester (40 percent), while just under half reported living in Rockport (49 percent). The remainder lived in Hamilton, Essex, Ipswich, and other communities outside of the service area.

The majority of riders (67 percent) indicated that they were not dependent on transit for mobility; only 7 respondents indicated that they rode CATA because they didn't have a car or driver's license. Most respondents answered the question "Why do you ride with CATA?" with an open-ended response and wrote that they used CATA because they enjoyed the riding experience.

Of the current fixed route riders, 69 percent of respondents lived in Rockport and 23 percent lived in Gloucester. The most popular routes used among fixed route rider respondents were the Thatcher Road/Red-Gloucester to Rockport Route and the Eastern Avenue/Green-Gloucester to Rockport Route (Figure 27).

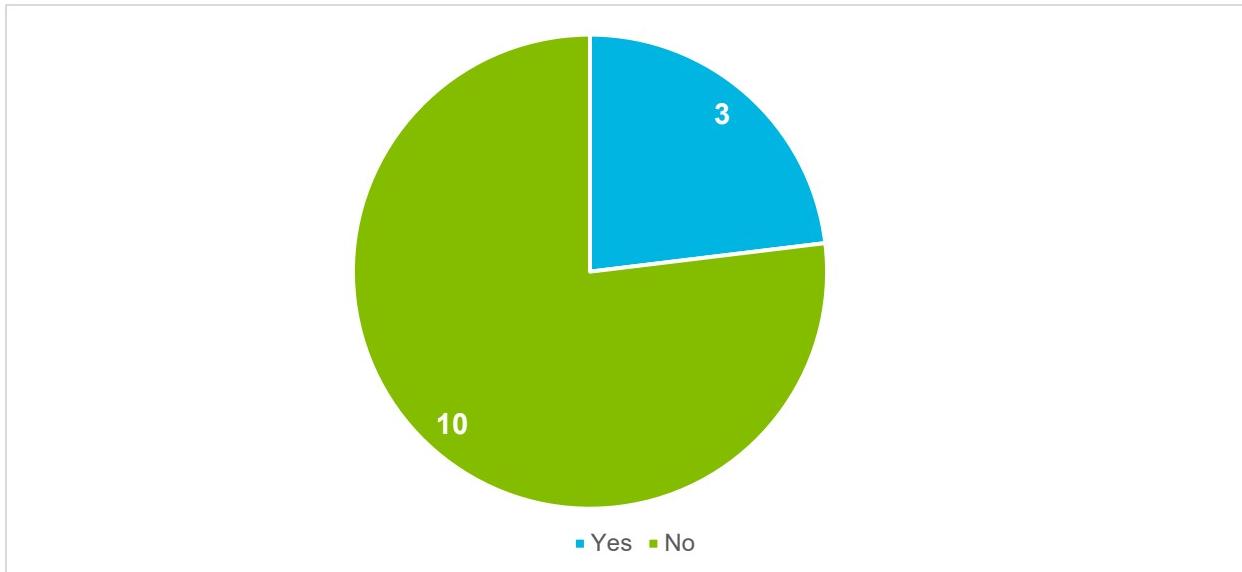
Figure 27. Fixed Route Riders: Primary Routes Used

n=12

Most of the 13 fixed route riders who provided their primary trip use reported using the service to shop (38 percent). Trips to medical appointments and work were equally popular, with three respondents each claiming these as their primary trip purpose.

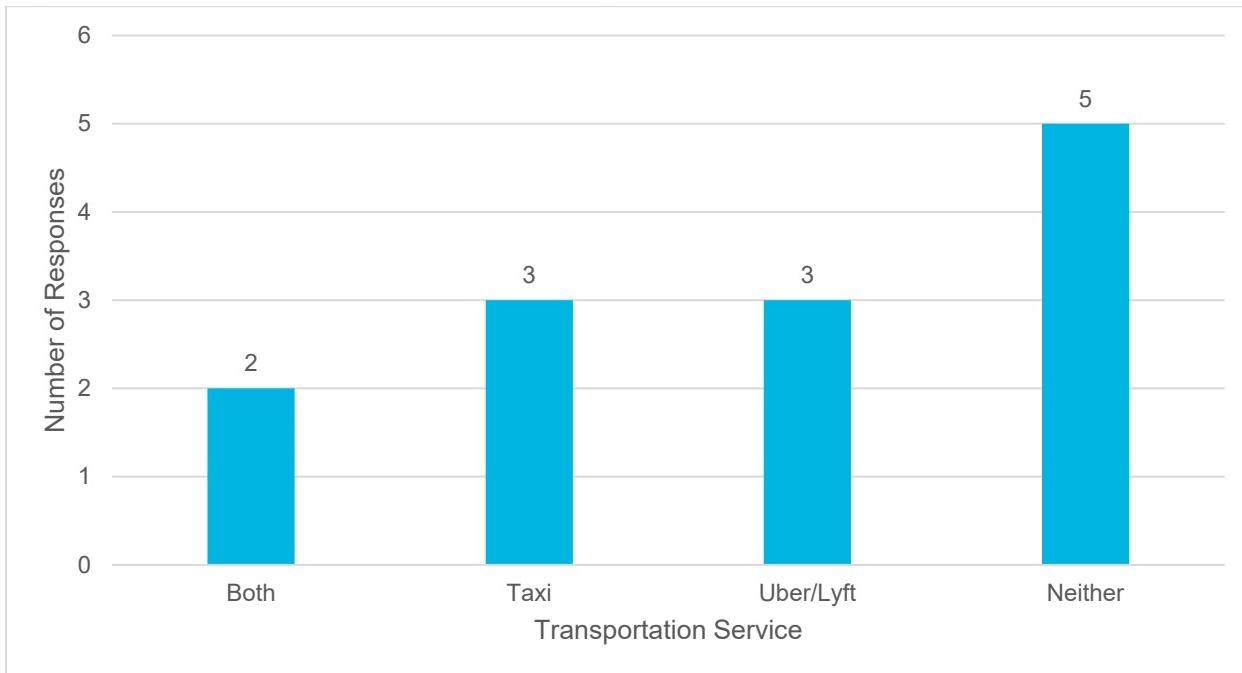
The majority of fixed route only riders reported paying for their trips with cash. The remaining riders used CharlieCards or other (one person reported using an employee pass). In addition to getting feedback on fare media used, CATA was interested in getting respondents' input on CATA's current bag policy. Most of the respondents did not have a problem with CATA's bag policy (Figure 28).

CATA also asked current riders for feedback on the Authority's fare zones. The majority of respondents (67 percent) were aware that CATA had different fare zones. When asked for additional comments, respondents indicated that the fare zones should be eliminated as the small service area meant that they currently had to pay extra to get to lifeline destinations, like the grocery store.

Figure 28. Fixed Route Riders: Has CATA's Bag Policy Been a Problem

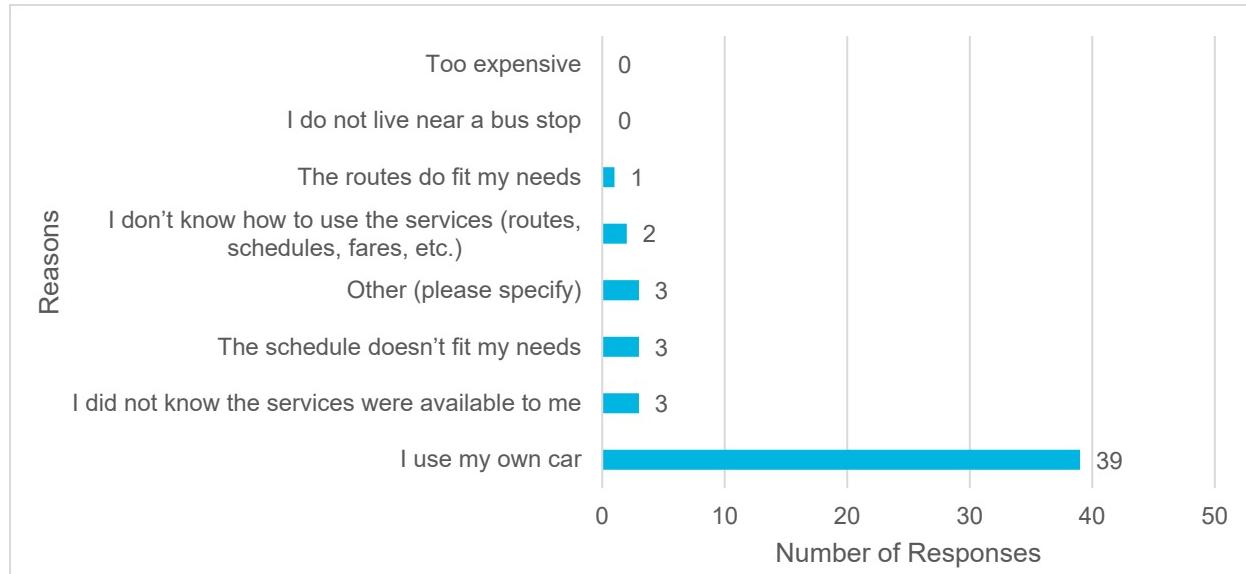
n=13

CATA was not the only transportation service used by many respondents – more than half of fixed route only respondents indicated they had used a taxi or rideshare service (Uber or Lyft) within the past year (Figure 29).

Figure 29. Fixed Route Riders: Other Transportation Services Used in the Past Year

n=13

In addition to seeking input from current riders, CATA was interested in understanding why non-riders did not currently use CATA service and what measures could be taken to get them to use CATA in the future. Most non-rider respondents indicated they did not use CATA because they had a car (Figure 30).

Figure 30. Non-Riders: Primary Reason for Not Using CATA

n=51

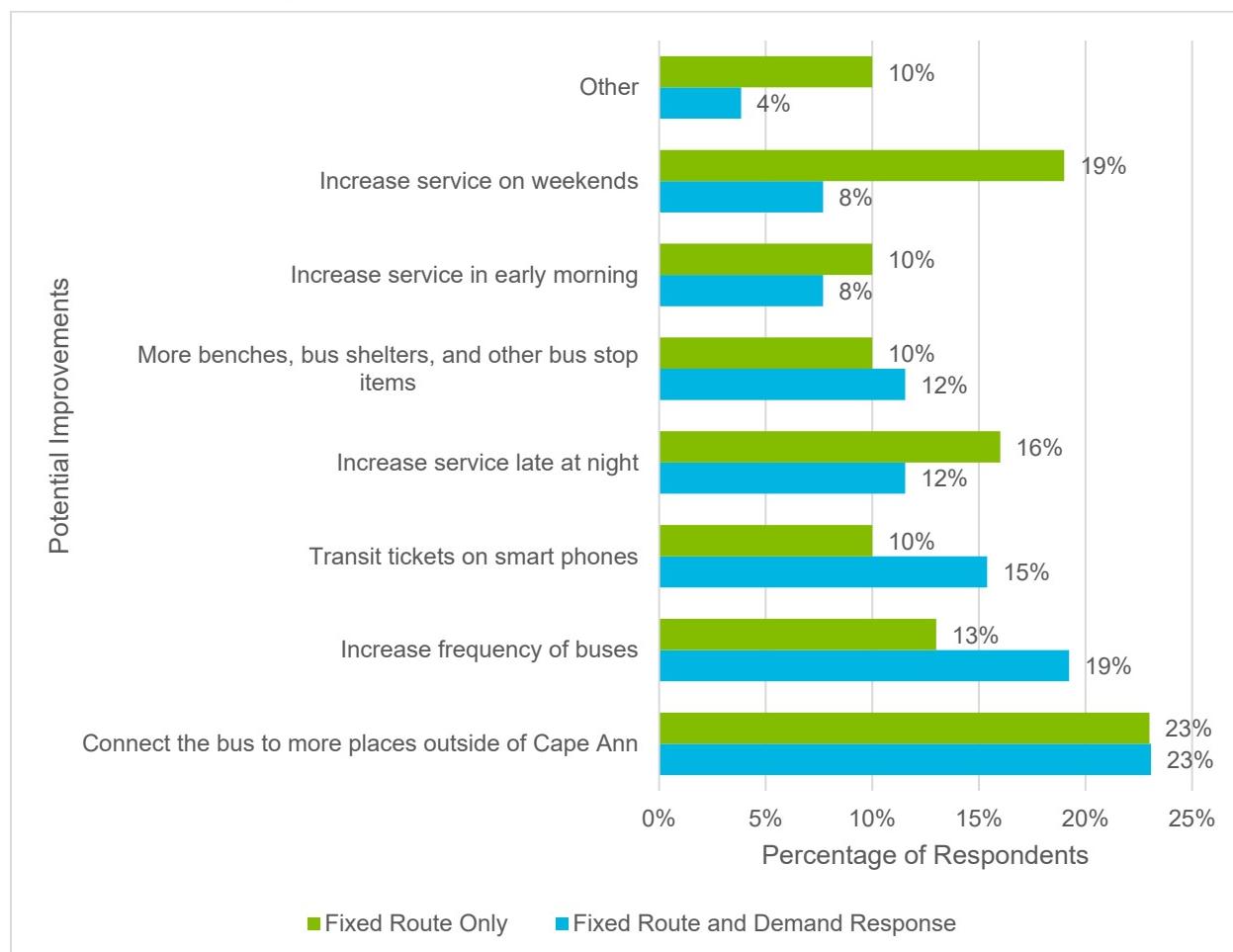
Despite not using the service, the majority of non-riders (98 percent) believed that CATA is a valuable resource to the Cape Ann region.

7.1.4.3 Needs or Opportunities for Future Improvements

The survey was designed to capture feedback on CATA's service from current riders and people who did not use the service. The purpose of these questions was to understand ways to improve the customer experience and draw non-riders to use the service in the future. Both fixed route only riders and fixed route and demand response riders were asked, "What are the biggest improvements that CATA should make over the next 5 years?" Both groups agreed that connecting the bus to more places outside of Cape Ann should be a priority in the next 5 years (Figure 31).

The priorities of the two groups diverged outside of wanting to expand CATA's service area; fixed route only riders would like to see more weekend and later evening service, while respondents who use both services would prefer CATA to run more frequent service. Other responses included splitting up the Business Express route and a desire for CATA to use GPS tracking on buses.

Figure 31. Fixed Route and Demand Response Riders and Fixed Route Only Riders: Improvements That Should Be Prioritized Over the Next 5 Years



n=22

When asked whether there were any changes CATA could make that would make them more inclined to use the service in the future, 36 percent of non-rider respondents indicated that CATA making service easier to understand (via “routes, schedules, fares, etc.”) would have the most impact on their decision (Figure 32). Of the 10 respondents who selected other, four said they would use the service in the future to get to destinations like medical appointments and one said they would use CATA transit if there were additional trips to medical appointments in Beverly, Peabody, and Danvers.

Figure 32. Improvements CATA Could Implement to Make Service More Appealing for Non-Riders

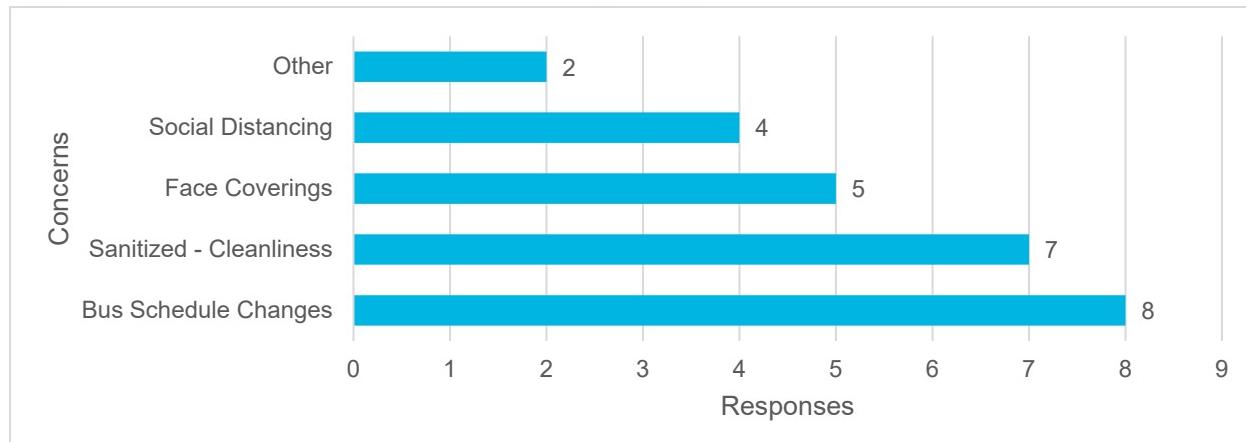


n=45

When asked where CATA should serve that it currently does not, 11 riders responded with the following destinations/requests (some of which were outside the current service area): Gloucester Crossing (two total), Danvers (two total), more frequent service on the business loop, Gloucester Loop, Beverly, Manchester-by-the-Sea, and additional businesses (e.g., Christmas Tree Shop).

CATA also used the survey to gauge respondents' comfort using service during the COVID-19 pandemic. CATA was interested in gaining insight into what measures could be taken to make riders feel safer on their vehicles and understand their concerns as service returned to normal levels in September 2020. CATA only received positive comments on the changes implemented in May 2020 in response to the pandemic (many of those changes are still in place, having been slightly revised in September 2020). Additional comments indicated that some respondents wanted the senior bus to continue to run to the malls and grocery stores and that the 11:00 AM bus from Rockport to Gloucester would still run. Riders were also concerned with buses being regularly cleaned and sanitized (Figure 33).

Figure 33. Fixed Route Rider Concerns Regarding COVID-19



n=13

7.2 Other Outreach

In addition to the stakeholder survey, the project team delivered an in-person presentation to the CATA Advisory Board on February 24, 2020. Discussion with the Board uncovered the following issues:

- Due to staff turnover, there was consideration of opportunities for reorganization to maximize efficacy of staff roles.
- Parking is a major issue during the peak season and CATA service can help alleviate parking and traffic pressures.
- Providing service to seniors in the region is a priority as the population continues to age and mobility services become more vital. Non-emergency medical transportation needs are only going to increase.
- Increasing ridership and decreasing the carbon footprint of the transportation system is a key goal of the region.
- The public transportation system should be sure to meet the needs of regional employers, such as the industrial parks in and around Cape Ann.

7.3 Key Takeaways

The key issues raised through the stakeholder engagement process include the following:

- Rider respondents would like CATA to offer more connections outside of Cape Ann.
- Riders and non-riders alike put great value on the availability of public transportation service on Cape Ann.
- Non-riders would be more inclined to use CATA if the service was easier to understand and there was more frequent service. Some also see themselves relying on CATA in later years when they can no longer drive themselves. Fare zones in particular are seen as confusing and unfair to Rockport residents.

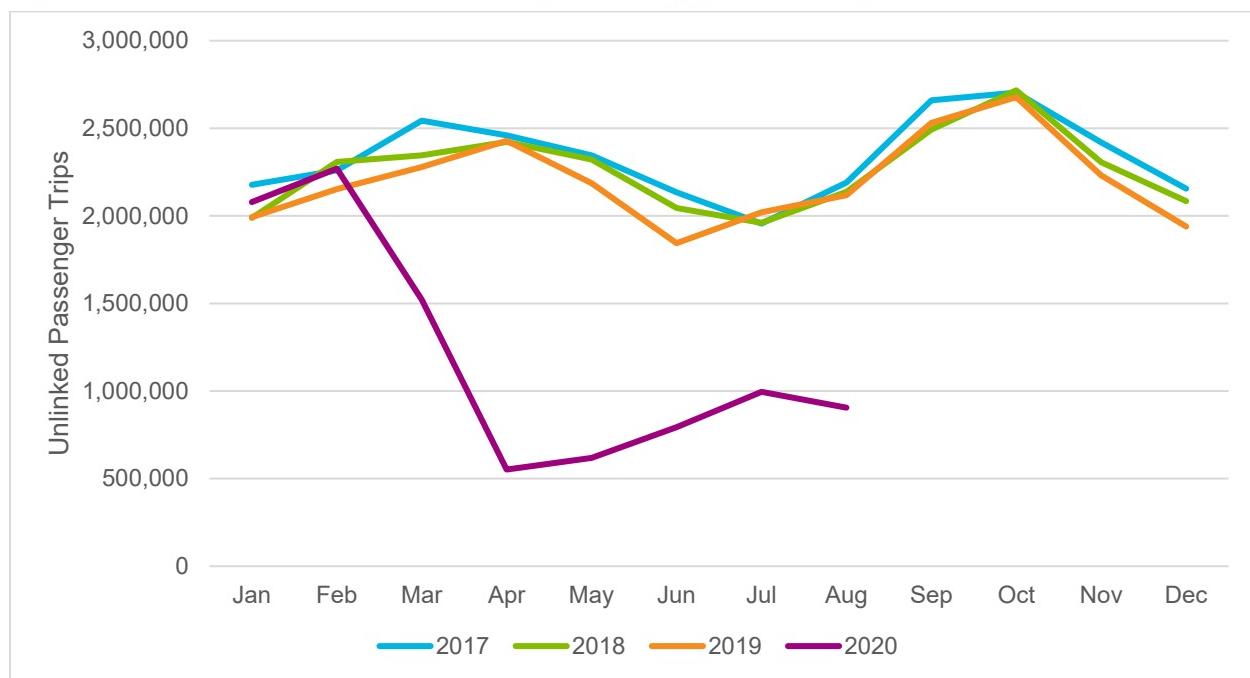
8. Transportation Service Needs

Transportation needs were identified for the CATA service area through discussions with CATA leadership, review of previous studies and relevant documents, analysis of the transit service operations from FY 2015 to FY 2019, and public outreach conducted as part of this plan. The needs identified in this chapter reflect this extensive analysis undertaken as a part of the overall planning process and directly inform the recommendations provided in Chapter 9.

8.1 FY 2020 Service

A central challenge in identifying needs for this plan has been the unprecedented context in which the plan was prepared. As described in Chapter 2, the COVID-19 pandemic has had sweeping impacts on all aspects of life, including major implications on the operation of public transportation. Between the stay-at-home order in spring 2020 and ongoing distance learning, business closures, telework, furloughs, layoffs, and reluctance to use public transportation, CATA has had to quickly adapt to a rapidly shifting landscape. CATA has transformed service protocols to meet safety needs while at the same time operating a service with radically shifted ridership and travel patterns (Figure 34).

Figure 34. Massachusetts RTA Monthly Ridership (2017–2020)



Source: NTD

Of the long-standing trends impacting the transit industry, the pandemic has served to accelerate some while disrupting others, while at the same time leaving a few trends largely unaffected. Some issues, such as the demographic composition of a region, remain largely unchanged – for example, CATA service area residents remain on average older than the rest of the Commonwealth regardless of the pandemic. Other industry trends, such as the adoption of new touch-free fare technology, may be accelerated due to public health concerns. Meanwhile, the pandemic has severely disrupted some markets, such as higher education, which have pivoted heavily to distance learning.

8.2 Needs Identification Process

The impacts and limitations imposed by the COVID-19 pandemic required flexibility in the approach for identifying the needs for this plan. While some elements of the original process developed pre-pandemic remained viable, many had to be adapted to respond to the new realities of COVID-19. From the inability to conduct public outreach in person to a newly volatile ridership market, the pandemic fundamentally shaped the identification of CATA's needs for the next 5 years.

8.2.1 Review of Transit Services and Market Conditions

A review of service from the last 5 years and market demand analysis were conducted to identify performance strengths/weaknesses as well as gaps and needs in CATA's service area. The analysis included a review of transit routes and other services, frequency and span of service, assets, technology, and policies. This planning process brought to light the importance of harnessing new technology to conduct ongoing analysis of real-time data rather than focusing primarily on historical trends.

8.2.2 Review of Previous Studies

In addition to the analysis of past operational data, the team reviewed previous studies and other relevant resources developed within the past 5 years, including the 2015 RTP. This review allowed CATA to track progress on past needs that had been identified, and confirm or update needs that were still standing (Table 15).

Table 15. Review of Previous Studies

Study Name	Author	Year Completed
Cape Ann Transportation Authority Regional Transit Plan	URS/AECOM	2015
Boston MPO Triennial Title VI Report	Boston Region Metropolitan Planning Organization	2017
Rockport Station Area Transit-Oriented Village Plan	Metropolitan Area Planning Council	2018
Coordinated Public Transit–Human Services Transportation Plan	Boston Region Metropolitan Planning Organization	2019
North Shore Coalition Transportation Vision Statement	Metropolitan Area Planning Council	2019

8.3 List of Identified Needs

Based on the information collected from public outreach, discussions with CATA leadership, and study of industry best practices and prior plans, a list of identified needs has been developed. Needs are described in this section by category of need (Table 16 to Table 22):

- Service
- Capital
- Performance
- Policy

- Coordination
- Studies
- Other

The needs directly inform the development of recommendations listed in Chapter 9 and include ID numbers to show a clear direct line between the source of the need to the recommendation to respond to that need. Importantly, some needs may be more pressing than others depending on how the transit market recovers from the COVID-19 pandemic, which is considered in Chapter 9.

8.3.1 Service Needs

Several specific service-related needs were identified through public outreach and prior plans (Table 16). These range from requests for service to specific regional destinations to more general needs such as running service on Sundays or extending hours.

Table 16. Service Needs

ID	Need	Sources	Notes
1	Improve route frequency to various degrees on all routes	<ul style="list-style-type: none"> • Public Outreach • CATA Regional Transit Plan • Rockport Station Area Transit-Oriented Village Plan 	
2	Increase service to medical centers, especially in Danvers and Beverly	<ul style="list-style-type: none"> • Public Outreach • Rockport Station Area Transit-Oriented Village Plan 	An ongoing challenge in the region is travel to medical appointments, in particular to medical offices in Beverly and Danvers.
3	Run regular service to Essex	<ul style="list-style-type: none"> • Public Outreach 	
4	Improve the Business Express Loop by reducing its duration and adding more frequency, which will add access to Gloucester Crossing (Market Basket) from Rockport	<ul style="list-style-type: none"> • Public Outreach • CATA Regional Transit Plan • Boston MPO Triennial Title VI Report • Rockport Station Area Transit-Oriented Village Plan 	
5	Increase service to Gloucester Crossing, with a specific stop at the Market Basket	<ul style="list-style-type: none"> • Public Outreach 	
6	Run a bus to regional airports	<ul style="list-style-type: none"> • Public Outreach 	
7	Improve connections between different bus loops	<ul style="list-style-type: none"> • Public Outreach • CATA Regional Transit Plan • Discussions with CATA leadership 	
8	Run additional service to Beverly	<ul style="list-style-type: none"> • Public Outreach • CATA Regional Transit Plan • Rockport Station Area Transit-Oriented Village Plan 	

ID	Need	Sources	Notes
9	Run additional service to Danvers	<ul style="list-style-type: none"> • Public Outreach 	
10	Improve service to Magnolia	<ul style="list-style-type: none"> • Public Outreach • CATA Regional Transit Plan 	
11	Keep the 11:00 AM Rockport to Gloucester Eastern Ave Bus	<ul style="list-style-type: none"> • Public Outreach 	
12	Add service to Gloucester Crossing on the Green Route	<ul style="list-style-type: none"> • CATA Regional Transit Plan • Rockport Station Area Transit-Oriented Village Plan 	
13	Extend service hours	<ul style="list-style-type: none"> • CATA Regional Transit Plan • Boston MPO Coordinated Public Transit–Human Services Transportation Plan • Rockport Station Area Transit-Oriented Village Plan 	
14	Implement Sunday service	<ul style="list-style-type: none"> • CATA Regional Transit Plan • Boston MPO Coordinated Public Transit–Human Services Transportation Plan 	
15	Simplify service information for first time or seasonal users (e.g., simplified schedules)	<ul style="list-style-type: none"> • Discussions with CATA leadership 	

8.3.2 Capital Needs

Several needs were identified related to new technology or other capital investments that CATA should consider (Table 17). Two major issues, the lack of a central transit hub for CATA and parking/traffic pressures during the tourism season, were reflected in the expressed need for a mobility hub in Rockport and better utilization of the existing park and ride.

Table 17. Capital Needs

ID	Need	Sources	Notes
16	Use GPS technology that allows customers to track their bus	<ul style="list-style-type: none"> • Public Outreach 	CATA currently has vehicle locators, integrating this with their website will be a priority.
17	Develop and implement better signage and promotion of existing park and ride facilities	<ul style="list-style-type: none"> • CATA Regional Transit Plan 	CATA has already installed additional signage on Route 128 to the park and ride lot in Gloucester.
18	Create a mobility hub at the Rockport station that would include signage showing destinations within walking distance, a future bike share station, and clearer pick-up/drop-off connections for CATA	<ul style="list-style-type: none"> • Rockport Station Area Transit-Oriented Village Plan • RTA Task Force Report 	
19	Improve bus accessibility and built environment accessibility such as bus shelters and benches	<ul style="list-style-type: none"> • Public Outreach • Boston MPO Coordinated Public Transit-Human Services Transportation Plan • RTA Task Force Report 	
20	Implement an easy-to-use scheduling system for Dial-A-Ride and ADA service using technology that improves the customer experience	<ul style="list-style-type: none"> • RTA Task Force Report 	

8.3.3 Policy Needs

Policy needs identified in this planning process focus primarily on fare policies, with a particular focus on the fare zone structure at CATA (Table 18). As noted in Section 4.6, fare zones in a service area the size of CATA's is unusual and disproportionately burdens those living in Rockport who have to cross zones in order to go grocery shopping. Fare considerations for the demand response service were also noted.

Table 18. Policy Needs

ID	Need	Sources	Notes
25	Introduce more equitable fare policies for regular riders, including eliminating the fare zone structure	<ul style="list-style-type: none">• Public Outreach• Discussions with CATA leadership	
26	Consider a cash-free Dial-A-Ride service	<ul style="list-style-type: none">• Discussions with CATA leadership• RTA Task Force	

8.3.4 Performance Needs

As outlined more fully in Chapter 6, several needs were identified through workshops and discussions with CATA leadership as well as research on industry best practices related to performance (Table 19). These include regular reviews of performance data, standards for making decisions on service based on performance, and expanding the data analysis capacity of CATA. These needs respond to the unprecedented uncertainty facing the transit industry in the aftermath of the COVID-19 pandemic.

Table 19. Performance Needs

ID	Need	Sources	Notes
21	Acquire technology that supports the expansion of robust demand response performance analyses and fixed route route-level performance analyses including organizing routes by service type (Fixed, Tripper, Commuter, and Seasonal), measuring ridership and other data by route, organizing ridership and other data by stop, and measuring passengers per mile, facilitating nimble, data-driven decisions	<ul style="list-style-type: none"> RTA Task Force 	
22	Increase CATA's capacity for data analysis through hiring of additional staff or working with other RTAs to develop a position for a statewide transit analyst position	<ul style="list-style-type: none"> Discussions with CATA leadership 	CATA recently completed an organizational study that included staffing recommendations.
23	Display CATA's performance analyses on the Authority's website in PDF format or interactive platform (through procurement of Tableau or similar technology). Consider publishing raw data on CATA's website for use by public	<ul style="list-style-type: none"> RTA Task Force 	CATA plans to implement an updated website in late 2020 or early 2021.
24	Create and implement actionable guidelines to accompany performance monitoring that inform service planning decisions particularly when ridership stabilizes	<ul style="list-style-type: none"> RTA Task Force 	

8.3.5 Coordination Needs

Likely due to the fact that CATA borders two separate transit providers, MBTA and MVRTA, several items related to better coordination were identified (Table 20). Additionally, the need to coordinate with member municipalities and key institutional partners in the CATA service area was also noted.

Table 20. Coordination Needs

ID	Need	Sources	Notes
27	Explore new locations for park and ride facilities that are easy to access and provide a quick ride to central tourist locations	<ul style="list-style-type: none"> • CATA Regional Transit Plan 	
28	Work with other RTAs and MBTA to further the coordination of inter-regional connections between the CATA, adjacent RTAs and MBTA	<ul style="list-style-type: none"> • CATA Regional Transit Plan • North Shore Coalition Transportation Vision • Boston MPO Coordinated Public Transit–Human Services Transportation Plan • Rockport Station Area Transit-Oriented Village Plan • RTA Task Force 	
29	Modernize and standardize fare collection by partnering with MBTA and adopting the new AFC 2.0 system on a statewide basis, while still maintaining an accessible system for cash customers as appropriate	<ul style="list-style-type: none"> • RTA Task Force Report 	
30	Engage with local developers, municipalities, employers, and planners to demonstrate how transit can enhance value, particularly with TOD	<ul style="list-style-type: none"> • RTA Task Force Report 	
31	Collaborate with local employers, municipalities, colleges and universities, health care providers, and any other regional partners that can assist in identifying mobility needs and discuss prioritizing those needs and/or providing financial support	<ul style="list-style-type: none"> • RTA Task Force Report 	CATA partnered with Gloucester's Economic Development & Industrial Corporation on a workforce transportation grant that was delayed due to the pandemic.

8.3.6 Study Needs

Some needs called out the importance of further study on a specific item (Table 21). Exploring Mobility-on-Demand (MOD) services and identifying routes or markets in need of expanded night and weekend service were noted in prior studies.

Table 21. Study Needs

ID	Need	Sources	Notes
32	Evaluate the feasibility of implementing newer on-demand transit services (microtransit)	<ul style="list-style-type: none">• North Shore Coalition Transportation Vision Statement• Rockport Station Area Transit-Oriented Village Plan• RTA Task Force Report	A partnership between CATA and the Gloucester Economic Development & Industrial Corporation has been planned to test “last mile” microtransit service from Gloucester Commuter Rail to the Industrial Parks.
33	Identify routes in the service area where there is a demonstrated community need for seven-day-a-week, evening, and night service and/or opportunity for a pilot service to test the market	<ul style="list-style-type: none">• RTA Task Force Report	

8.3.7 Other Needs

A few needs did not fit into the categories above, including communications needs, environmental needs, and safety needs (Table 22). The safety needs in particular are a pressing topic in the context of the COVID-19 pandemic and CATA is deeply committed to them through enforcement of mask policy, regular sanitation and cleaning protocols, and other activities as described in state and federal guidelines.

Table 22. Other Needs

ID	Need	Sources	Notes
34	Communications Need: Improve communications with the public and increase awareness of CATA services	<ul style="list-style-type: none">• Public Outreach• CATA Regional Transit Plan• Boston MPO Coordinated Public Transit–Human Services Transportation Plan• RTA Task Force	CATA plans to launch a new website in late 2020/early 2021.
35	Environmental Need: Continue to work towards achieving regional and statewide environmental goals	<ul style="list-style-type: none">• CATA Regional Transit Plan	
36	Safety Need: Continue to take COVID-19 precautions such as regular cleaning and mask requirements	<ul style="list-style-type: none">• Public Outreach	CATA will continue regular cleaning, sanitizing, and enforcement of masks and social distancing rules consistent with state and federal guidance.

9. Recommendations

The recommendations for this 5-year plan are based on a holistic process that takes into account historical operational data, stakeholder input, industry best practices, Commonwealth-wide goals, and RTA priorities. The strategy for generating these recommendations embraces the uncertainty introduced by the COVID-19 pandemic and considers a spectrum of recommendations depending on ridership demand in the region. These recommendations provide a decision-making framework for pursuing strategic service changes, capital enhancements, and policy approaches, and prioritize maximizing mobility options for residents of the CATA service area.

9.1 Guiding Principles

As CATA prepares for the next 5 years, several looming questions face operators across the country: When will ridership return? How might the transit market be permanently changed by the pandemic? How can new technology be used to accommodate these changes to the transit market? How might new housing preferences impact transit demand?

Despite the uncertainty facing the transit industry due to the COVID-19 pandemic, several guiding principles remain steadfast despite the shifting transit landscape. These guiding principles must be considered as CATA's needs are analyzed and recommendations are made.

- **Safety:** The pandemic has underscored the incredible importance of safety as the number one priority for CATA. Before the pandemic, safety included considerations such as driver training, security systems, security guards at key locations, and enforcement of the Drug and Alcohol Program. In the context of the COVID-19 pandemic, safety considerations have been expanded to include issues such as routine cleaning, sanitizing, enforcement of mask and social distancing mandates, and removal of benches and other amenities that may encourage congregation at transit facilities.
- **Top-Notch Customer Experience:** A primary guiding principle is the commitment to the best customer experience possible. The entire purpose of a transit agency is to move people efficiently to their desired destinations, and the efficiency of the system depends on robust ridership. Ensuring a high-quality customer experience is the best way to acquire and retain a loyal ridership base, especially during times of uncertainty.
- **Equity Considerations/Title VI:** Equity is an organizational priority for CATA in addition to being a requirement of state and federal regulations. Federal guidance requires that service supported by federal funding must not be provided in a way that places undue burdens on minority populations or those living in low-income households. Equity considerations are codified in CATA's Public Participation Plan and Language Access Plan, both of which ensure that major service decisions are done in consultation with the public.
- **Fiscal Responsibility:** A key group that CATA has responsibility to is the taxpayer, and as such CATA pays close attention to the efficient use of public funding to meet local and statewide goals. While maximizing ridership is one metric for assessing efficient use of funding, there are numerous other goals expected of public transportation operators (many of which are listed later in this section).
- **Environmental Stewardship:** CATA and the Commonwealth of Massachusetts have both made a commitment to environmental stewardship, and this commitment should guide decisions even in an uncertain future. This ongoing commitment to reducing environmental impacts must be reflected in the priorities of CATA, with a recognition that one of the most meaningful environmental goals is shifting car trips to fixed route bus trips.

- **Regional Land Use and Economic Development Goals:** There are numerous land use and economic development goals at the regional and local level that should guide CATA's decisions. This could be service to new 40R (Smart Growth) developments near commuter rail stations in the region or routes that serve industrial parks or commercial developments.
- **Data-Driven Performance-Focused Decision-Making:** CATA's service and fiscal decisions should be made within a data-driven and performance-focused framework that is the foundation for management of the Authority and provides accountability and transparency.

9.2 Performance Monitoring

As outlined in Chapter 6, performance monitoring is the key strategy to navigate the extreme uncertainty facing CATA in the context of this 5-year plan. Since the pandemic began, ridership has declined sharply across the CATA system, and it is unclear which routes and modes will bounce back more quickly and which will be compromised for a longer period.

Performance monitoring depends on three key ingredients that underpin the entire approach of this plan:

- **Data Collection:** A transit agency must have the data collection systems in place from which to draw the information for making decisions. These systems can be automated, such as APCs, or are drawn from manual observations or samples. Validation of the information collected is a crucial aspect of data-driven decision making.
- **Data Analysis:** Transit operators can be overwhelmed with the data produced on a daily or even hourly basis from the systems used in delivering service. Information from AVLs, APCs, fareboxes, phone systems, and other technology can be voluminous, and having appropriate levels of data analysis capacity is essential for distilling the information into key decision-driving reports.
- **Decision-making Processes:** The final essential component of using data to drive decisions is developing the process by which key decision-making bodies, such as the Administrator, senior staff, and/or the oversight board, are presented with information for making choices and acting upon that information. This can include regular reviews of summary reports and/or meetings to review key performance metrics with responsible staff.

Each step of the process for a data-driven decision-making framework is necessary but, in and of itself, insufficient to confront the volatility facing the transit industry. Taken together, they provide a powerful framework for navigating the uncertainty of the coming months and years. The recommendations provided in Chapter 64.6, and reiterated below, underscore this essential strategy CATA is utilizing to ensure the best possible decisions are made in the context of the COVID-19 pandemic.

9.3 Ridership Scenarios

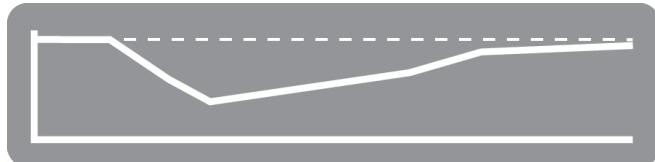
Many of the recommendations in this plan are structured around the uncertainty of how ridership could rebound in the CATA service area, even though some of the recommendations preceded the COVID-19 pandemic. While other considerations, such as funding availability, are important when understanding what the future might hold, this plan's approach focuses on ridership demand as the primary driving factor for these future scenarios.

In order to better understand how ridership might change in the coming months and years, CATA used three qualitative ridership scenarios to sketch out the future of transit demand in potential futures through 2025. These include a high-ridership scenario (a return to 86 percent

of pre-pandemic ridership), a medium-ridership scenario (60 to 85 percent of pre-pandemic ridership), and a low-ridership scenario (below 60 percent of pre-pandemic ridership). These are explored further in the following sections.

9.3.1 High-Ridership Scenario

In the high-ridership scenario, this plan imagines what the world will look like when CATA's ridership reaches 86 percent of the levels it had pre-pandemic (roughly February 2020). Even though system



ridership has returned to roughly 2019 levels, some specific markets might continue to be impacted. The conditions expected to have occurred in a high-ridership scenario are:

- There is an effective vaccine developed and widely available around the country. Vaccination rates exceed 80 percent of the population, achieving “herd immunity.”
- There is continued federal support for small businesses and state and local governments to reduce layoffs resulting from the pandemic and prevent further workforce reductions due to lagging consumer spending and tax receipts.
- Major regional events restart with strong attendance, and local businesses are able to reopen with minimal permanent closures resulting from the pandemic.

As a result of a successful vaccination development and distribution effort, and ongoing federal support, ridership would be expected to return to near levels seen in 2019. Specific aspects of this return of ridership demand include the following:

- Regional tourism drives strong demand for transit due to traffic and parking constraints.
- Restaurants, cafés, and art galleries open with strong sales as people return in record numbers after months of social distancing and deferred travel plans.
- High schools resume full in-person education, though at-home learning may be somewhat more common than pre-pandemic.
- Unemployment drops to levels seen pre-pandemic, with people traveling to work on transit, in particular service-sector workers who depend on public transportation for mobility.

Importantly, the high-ridership scenario does not envision ridership rising above where it was pre-pandemic, but rather envisions a return to ridership at roughly the same levels seen in 2019.

9.3.2 Medium-Ridership Scenario

The medium-ridership scenario imagines a future in which ridership recovers to 60 to 85 percent of pre-pandemic ridership. This scenario would envision the following conditions:



- The COVID-19 vaccine is slow to be developed, has limited effectiveness, has distribution problems, or has low-uptake due to public skepticism about its safety. While many people would be vaccinated, this lack of widespread immunization means that many are still reluctant to be in public spaces for fear of infection.
- Federal support for small businesses and laid off workers is modest, and state and local governments are forced to reduce services and lay off staff due to significant funding shortfalls.

- Some economic activity returns as portions of the population are vaccinated and return to pre-pandemic activities, though unemployment still remains substantially higher than in 2019.

As a result of this middling performance on vaccination and economic support, the transit market remains depressed. Some specific transit market impacts are:

- Tourism on Cape Ann returns but at a lower level than pre-pandemic. The demand for travel to key tourism destinations, from both tourists and the employees who run businesses, lags.
- High school classes resume mostly in person, though there is more flexibility for parents to keep their children at home.
- Those riders most sensitive to the risks of the pandemic (seniors, people with pre-existing conditions) tend to use demand response transit more often, which has higher fares than fixed route transit. The perceived risk of riding and prohibitive cost of fares reduces overall demand.
- Unemployment remains somewhat high and travel to service-sector places of work is depressed, reducing overall ridership.

These factors produce a scenario where there is some rebound from the lows of spring 2020 but keep overall system ridership below pre-pandemic numbers.

9.3.3 Low-Ridership Scenario

The low-ridership scenario imagines a future where the transit market is permanently compromised and transit demand has been structurally impacted, resulting in an indefinite plateau at or near ridership levels during the worst of the pandemic. There are some seasonal fluctuations but overall ridership remains below 60 percent of the level seen in 2019. This scenario envisions the following conditions:



- The vaccine development effort proves to be more challenging than anyone thought, with vaccine trials showing limited or no effectiveness, or the need for annual vaccinations similar to flu shots.
- There is a strong shift in housing demand from urban areas (e.g., Boston) to auto-oriented suburban housing in the CATA region as well as a move toward part- or full-time telework for computer-based professions.
- High schools continue a hybrid educational model, actively encouraging at-risk students to learn from home.
- The national economy enters a period of extreme volatility, with unemployment rates spiking due to disruptions from recurring lockdown and social distancing orders.
- The federal government is stuck in gridlock and is unable to intervene effectively in addressing the ongoing economic crisis. Plummeling state and local revenues force layoffs, which exacerbate the economic turbulence.

This poor outcome on both the economic and public health fronts could impact the transit market in the following ways:

- Local business closures due to poor economic conditions and the ongoing cancellation or underattended public events severely depress ridership demand.

- High school travel demand is minimal due to the severe impacts of the pandemic.
- The severity of infection rates of the disease results in an ongoing hesitation to be in any public space, including transit vehicles, which diverts people to alternatives such as carpooling, active transportation, or lower capacity shared rides (e.g., Uber/Lyft).
- The movement of people from more transit-oriented pre-war development into auto-oriented suburbs further erodes the market for fixed route transit and expands the need for demand response service.

The ongoing presence of high infection rates and the inability of the federal government to address the economic fallout result in volatility in the transit market, with ridership on average staying under 60 percent of pre-pandemic levels.

9.4 Key Recommendations

The needs outlined in Chapter 8 drove the development of recommendations presented in the following sections. The recommendations are broken down by service, capital, policy, performance, coordination, studies, and other needs. If a recommendation spans two or more categories, it is denoted with an icon to indicate that it is cross-listed (Table 23).

Table 23. Recommendation Categories

Category	Icon	Description
Service		Service recommendations deal with specific routing or other operational considerations of day-to-day provision of service.
Capital		Capital recommendations deal with the purchase or management of equipment, rolling stock, facilities, or other assets.
Policy		Policy recommendations deal with practices and standards adopted by the transit agency to guide how the organization functions.
Performance		Performance recommendations deal with the systems and protocols for monitoring agency operations.
Coordination		Coordination recommendations deal with communications between the transit agency and other regional and statewide partners.
Studies		Studies recommendations deal with needs that require further examination in order to make an informed decision.
Other		Other recommendations deal with issues not handled by the other categories.

This breakdown of recommendations can be used to help inform funding priorities, with CATA using it as a reference document for assembling future grant applications. It also serves to outline the approach that CATA will be taking depending on the level of transit demand (described in Section 9.3).

Importantly, some recommendations respond to “Core Needs,” which exist independent of the level of ridership. These recommendations tend to relate to pre-existing industry trends, such as no-touch mobile ticketing, that should be pursued regardless of whether ridership is at 50 percent of pre-pandemic levels or 100 percent.

Table 24 through Table 30 include the specific need(s) from Chapter 8 that the recommendation is responding to, listed in the column “Need ID.” This establishes a clear line from the source of the needs (e.g., public comment) to the development of the specific need and the recommendation that responds to that need.

9.4.1 Service Recommendations

Service recommendations for CATA center on improving transportation options for residents of Cape Ann, including medical transportation to providers outside of the service area. In general, the recommendations in Table 24 are not complex to implement and could have important benefits to current and potential users of the system. Four of these needs are listed as core needs due to the fact that they are long-standing issues that are unlikely to be impacted by how quickly ridership rebounds.



Table 24. Service Recommendations

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
Pursue funding opportunities to expand medical transportation, in particular Danvers and Beverly.	2, 8, 9	X				Mid-Level	High
 Better assess the transit market for fixed route service to Essex.	3				X	Low	Low
Reconfigure the Business Express Loop to increase access to Market Basket and expand frequency, including for residents of Rockport.	4, 5	X				Low	High
 Assess the transit market for direct connections to regional airports (e.g., Logan Airport).	6				X	Low	Low
 Review current route configurations to ensure ease of transferring from one route to another.	7	X				Low	High
 Engage in discussions with Gloucester and Rockport to explore opportunities for new park and ride locations.	27			X		High	Mid-Level
Simplify service information for first time or seasonal users (e.g., simplified schedules).	15	X				Low	High



9.4.2 Capital Recommendations

The capital recommendations focus to a large extent on technology needs, such as real-time bus tracking software and other new mobile applications (Table 25). The complexity of these recommendations was considered to be relatively high due to the procurement process and the expertise needed to effectively implement the recommendations. However, the impact of these recommendations was also considered to be generally high due to the number of customers that the recommendation would impact.

Table 25. Capital Recommendations

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
Work with the AVL vendor to explore opportunities for real-time bus tracker capabilities.	16	X				High	High
 Develop a strategy for bus stop improvements that includes a prioritization plan.	19	X				Mid-Level	High
Explore platforms for online and mobile paratransit booking, Where's My Ride tracking capabilities, and mobile fare payment.	20	X				High	Mid-Level
 Coordinate with other RTAs for opportunities for joint procurement of technology to support data-driven decision making or other organizational goals.	21	X				High	High

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
 Develop a communications strategy that includes creation of a social media presence, visual communications through posters and installation of dynamic screens on board buses, as well as frequent interaction with local media.	34	X				Mid-Level	High
 Pursue funding opportunities to meet Commonwealth-wide environmental goals.	35	X				Mid-Level	Mid-Level

9.4.3 Policy Recommendations

A key recommendation dealing with policy had to do with the implementation of a data-driven decision-making framework for evaluating service changes based on performance and market demand. Several public comments requesting specific service enhancements are addressed by this recommendation. That policy recommendation, as well as the other two in Table 26, will be implemented regardless of how ridership rebounds.



Table 26. Policy Recommendations

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
 Use a performance-driven framework to establish appropriate service levels to specific transit markets and on specific routes.	1, 10, 11, 12, 13, 14, 24, 32, 33	X				Mid-Level	High
Eliminate the fare zone structure currently in place.	25	X				Mid-Level	High
 Pursue funding opportunities to pursue Commonwealth-wide environmental goals.	35	X				Mid-Level	Mid-Level

9.4.4 Performance Recommendations

The key recommendation relating to performance is to develop standards as outlined in Chapter 6 to determine whether a specific route is performing well. Due to the volatility in the transit market resulting from the COVID-19 pandemic, these route-level standards will be assessed once ridership stabilizes. Related to that is building data analysis capacity on the CATA staff and making performance information publicly available. These recommendations will have a meaningful impact on the way that decisions are made at CATA.



Table 27. Performance Recommendations

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
 Use a performance-driven framework to establish appropriate service levels to specific transit markets and on specific routes.	1, 10, 11, 12, 13, 14, 24, 32, 33	X				Mid-Level	High
 Coordinate with other RTAs and/or MassDOT for the hiring of a data analyst serving multiple RTAs.	22	X				Low	High
 With the launch of the new CATA website, include a performance dashboard that is updated at least quarterly showing route-by-route metrics in addition to systemwide and modal performance data.	23	X				Low	Mid-Level

9.4.5 Coordination Recommendations

Several of the recommendations in this plan deal with coordination with MBTA and MVRTA, as well as ongoing general coordination between the RTAs in the Commonwealth and with member communities and institutions within the CATA service area (Table 28). This coordination can lead to streamlined procurement opportunities, partnerships for expanded service, and a more seamless customer experience. While the complexity is relatively low, the potential impact of this coordination is substantial.



Table 28. Coordination Recommendations

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
 Coordinate with other RTAs for opportunities for joint procurement of technology to support data-driven decision making or other organizational goals.	21	X				High	High
 Coordinate with other RTAs and/or MassDOT for the hiring of a data analyst serving multiple RTAs.	22	X				Low	High
Confer with other RTAs who have transitioned to an account-based fare payment system or other cash-free system.	26	X				Medium	High
 Engage in discussions with Gloucester and Rockport to explore opportunities for new park and ride locations.	27			X		High	Mid
Coordinate with MBTA on any upcoming service changes as a result of the pandemic, economic recession, or any other reason.	28	X				Mid-Level	high

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
Engage in semiannual meetings with MVRTA to consider expanded inter-RTA connections.	28				X	Low	Low
Continue coordinating with MBTA on its fare transition plan. Develop a timeline for making decisions about CATA's fare policy given ongoing uncertainty of the MBTA timeline.	29		X			High	High
Engage in regular communications with member communities to ensure that appropriate service levels are provided to expected new regionally significant developments.	30, 31		X			Low	High

9.4.6 Studies Recommendations

Several recommendations are derived from public comment requests where the overall demand for a specific service enhancement is unclear. Where there is no existing service to establish what potential demand is, a study is recommended to consider the potential market more closely for establishment of a new service (Table 29).



Table 29. Studies Recommendations

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
 Better assess the transit market for fixed route service to Essex.	3				X	Low	Low
 Assess the transit market for direct connections to regional airports (e.g., Logan Airport).	6				X	Low	Low
 Review current route configurations to ensure ease of transferring from one route to another.	7	X				Low	High
Explore the possibility of developing a mobility hub in Rockport through a study.	18			X		Mid-Level	High
 Develop a strategy for bus stop improvements that includes a prioritization plan.	19	X				Mid-Level	high

9.4.7 Other Recommendations

One recommendation specifically dealt with enhancing a communications strategy that included several capital enhancement elements (Table 30). This recommendation is considered a core need, particularly in light of rapidly changing safety protocols in the context of COVID-19. Additionally, expansion of communications capabilities will help to attract and retain new ridership beyond the traditional customer base.



Table 30. Other Recommendations

Recommendation	Need ID	Core Need	Low-Ridership Scenario	Medium-Ridership Scenario	High-Ridership Scenario	Complexity of Implementation (Low, Mid-Level, High)	Impact (Low, Mid-Level, High)
 Develop a communications strategy that includes creation of a social media presence, visual communications through posters and installation of dynamic screens on board buses, as well as frequent interaction with local media.	34	X				Mid-Level	High

Appendix A Illustrative FY2015–FY 2019 Performance Results and Peer Review

Performance Evaluation

To provide historical context for CATA's performance since the 2015 RTP, this appendix provides information on CATA's systemwide performance for fixed route and demand response modes for FY 2015 through FY 2019. (FY 2020 results are covered under the Bilateral CATA/MassDOT MOU discussed in Chapter 6.) A brief performance comparison with peer transit systems is also included in this appendix.

Fixed Route Service Performance

CATA, like many transit agencies, is currently not able to track revenue by route. With student passes making up a significant amount of fares paid and cruise ship passengers using passes in summer months, it is challenging to calculate route revenue based on farebox data alone.

On-Time Performance

CATA does not track on-time performance for its service.

Service Effectiveness

Service effectiveness describes the amount of service utilized per unit of transit service provided. Service effectiveness is measured based on two indicators: passengers per mile and passengers per hour. Passengers per mile is a measure of efficiency and trip length. Large numbers indicate shorter trips. Smaller numbers could indicate either longer trips, where passengers are traveling greater distances, or poorer performing routes where few people use the service.

Passengers per hour measures ridership as a function of the amount of service provided and will vary based on the geographic spread of the area and average operating speed. Higher numbers indicate a more efficient system.

CATA operates a fixed route service with lower trips per revenue hour than Massachusetts RTA average, likely due to the relatively rural context. The highest productivity route is the Purple Line, while the Orange Line is the highest ridership route (Table 31).

Table 31. Operating Statistics by Route (FY 2019): 12-month services only

Route	Ridership	Revenue Hours	Revenue Miles	Trips/Hour
Red Line	23,553	2,423	No Data	9.7
Green Line	15,227	2,087	No Data	7.3
Orange Line	51,392	3,241	No Data	15.9
Blue Line	36,150	3,221	No Data	11.2
Yellow Line	7,336	346	No Data	21.2
Purple Line	9,933	381	No Data	26.1
Total (Average)	143,591	11,699	No Data	12.3

Source: CATA

*Does not include seasonal routes.

On a systemwide level, CATA service is somewhat less efficient than state or national averages (Table 32).

Table 32. Fixed Route Productivity (FY 2019): All Routes (includes seasonal routes)

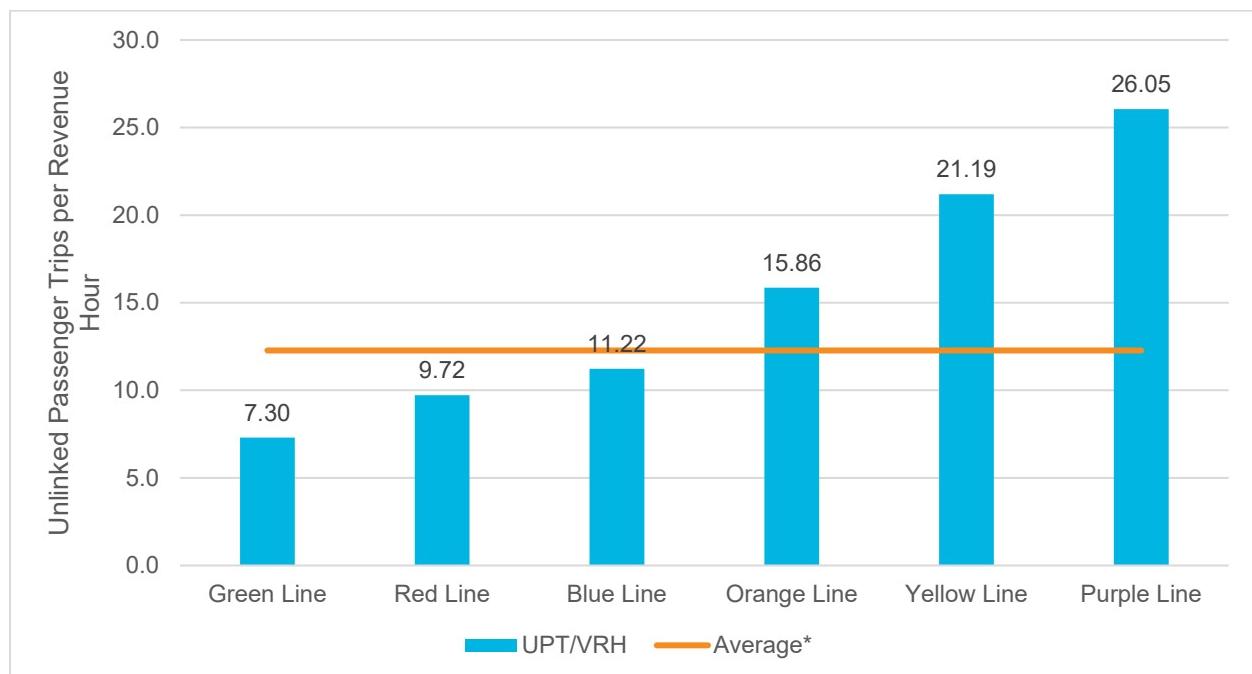
Averages	Trips/Mile	Trips/Hour
Fixed Route Average	0.94	13.37
Massachusetts Average*	1.37	18.39
National Average	2.26	27.21

Source: CATA, NTD

*Does not include MBTA.

At the route level, two of the routes' performance on a trips per hour basis exceed the state average (Figure 35). Data were not available for seasonal routes, although they should be examined to better understand how to improve systemwide performance.

Figure 35. Fixed Route Trips per Revenue Hour by Route (FY 2019)



Source: CATA

*Average of routes reporting data.

Demand Response Service Performance

CATA operates a relatively high percentage of demand response for seniors and people with disabilities. The statistics shown below are for both services combined.

Service Effectiveness

CATA's demand response service performs better than the Massachusetts average for trips per mile and per hour (Table 33). This may be due to the relatively small service area, and due to the reliance on the demand response service in communities without year-round fixed route.

Table 33. Demand Response Productivity (FY 2019)

Averages	Trips/Mile	Trips/Hour
Demand Response Average	0.22	2.79
Massachusetts Average*	0.15	2.13
National Average	0.13	1.97

Source: CATA, NTD

*Does not include MBTA, CCRTA, or MART.

Financial Performance

Cost effectiveness measures the effectiveness of the system from a financial standpoint – how efficiently the dollars put into the system are being used to produce passenger trips. The cost effectiveness indicators are cost per passenger, cost per mile, cost per hour, farebox recovery, and subsidy per passenger. While CATA does have cash fare information collected by route (Table 34 and Figure 36), total revenue (including non-cash fares) by route is not available, so revenue per passenger is not available. Cash fares as a percentage of all fare media range from under 20 percent on the Yellow Line to over 70 percent on the Blue Line. In general, routes with higher average cash fare per trip also have a higher percentage of cash fares used as a proportion of all fare media.

CATA's fixed route and demand response systems do not generally perform as well as transit agencies in Massachusetts or around the nation in terms of financial efficiency (Table 35 and Table 36).

- **Cost per hour** measures the financial efficiency of providing service. A smaller cost per hour indicates more financially efficient routes, and is reflective of wage rates, state of good repair for vehicles, and other elements of operator contracts. Similar to cost per mile, CATA does not perform as well as state averages on this metric.
- **Cost per mile** measures financial efficiency of providing each mile of service and will vary based on the average operating speed. A smaller number indicates more financially efficient routes and/or faster operating speeds. CATA has a larger cost per mile compared to state averages again in large part due to the operating contract cost per hour.
- **Farebox recovery** measures the percentage of operating cost covered by fares and is an outcome heavily influenced by the ridership productivity of a route against its total operating cost, as well as the fare policy of the system. It is calculated by dividing fare revenue by operating cost. For both fixed route and demand response, CATA has a farebox recovery ratio less than half that of the statewide average for the same reasons as above.
- **Subsidy per passenger** measures how much it costs to operate a route on a "per passenger" basis. It is calculated by subtracting passenger revenue from operating cost and dividing by the total number of passengers. It is the cost to operate after taking into account fare revenue and represents the required operating subsidy to run the service. CATA requires a higher subsidy per passenger compared to state and national averages

for both fixed route and demand response service. Demand response service performs somewhat better than fixed route due to a relatively high rate of passengers per hour.

Table 34. Fixed Route Cash Fares per Trip by Route (FY 2019)

Route Name	Average Cash Fare per Trip	Percentage Cash Fares*
Yellow Line	\$0.31	19.4%
Purple Line	\$0.36	31.3%
Orange Line	\$0.56	67.8%
Red Line	\$0.59	60.3%
Blue Line	\$0.66	72.1%
Green Line	\$0.72	60.0%

Source: CATA

*Sample Date: March 3, 2019

Table 35. Fixed Route Financial Efficiency Compared to Massachusetts and National Averages (FY 2019)

Route	Cost/ Mile	Cost/ Hour	Cost/ Passenger	Subsidy/ Passenger	Farebox Recovery
Fixed Route Average	\$8.50	\$120.33	\$9.00	\$8.24	8.53%
Massachusetts Average*	\$7.24	\$97.20	\$5.29	\$4.47	15.4%
National Average	\$11.15	\$133.99	\$4.92	\$3.83	22.1%

Source: CATA, NTD

*Does not include MBTA.

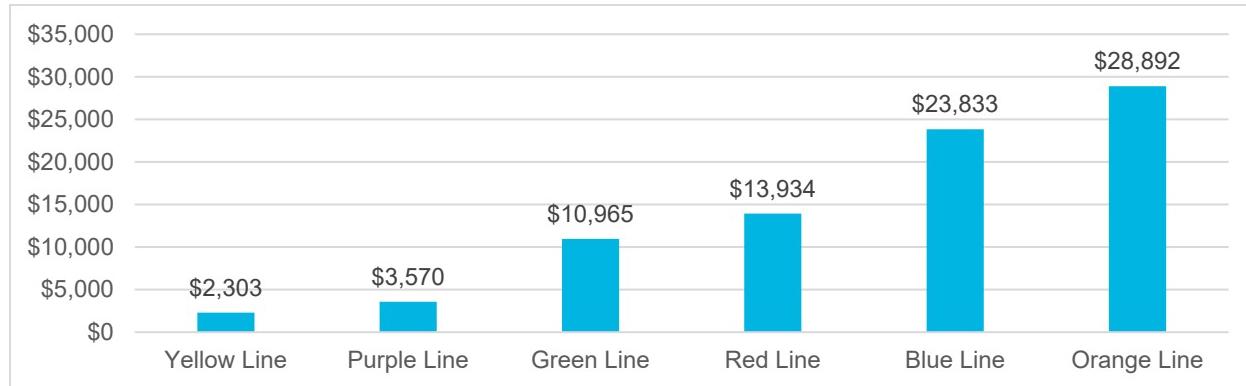
Table 36. Demand Response Financial Efficiency Compared to Massachusetts and National Averages (FY 2019)

Route	Cost/ Mile	Cost/ Hour	Cost/ Passenger	Subsidy/ Passenger	Farebox Recovery
Demand Response*	\$6.74	\$84.39	\$30.21	\$29.17	3.44%
Massachusetts Average**	\$4.38	\$59.86	\$28.28	\$25.95	8.3%
National Average	\$4.33	\$64.93	\$32.92	\$30.46	7.5%

Source: CATA, NTD

*Cost by type of demand response service is not available.

**Does not include MBTA, CCRTA, or MART.

Figure 36. Cash Fare by Route (FY 2019)

Source: CATA

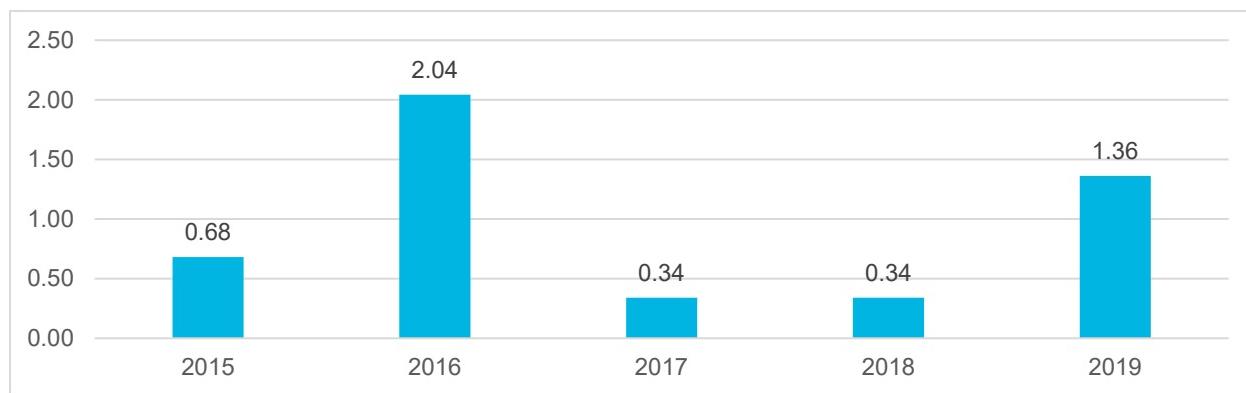
* Does not include non-cash fare revenue (e.g., day passes).

Capacity

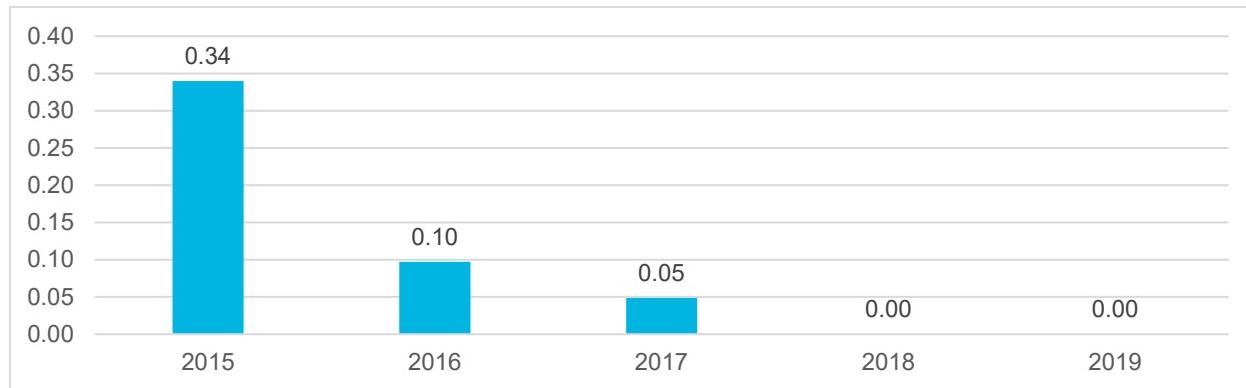
CATA does not have any indications of capacity constraints. Demand response metrics such as no-shows or missed trips are not available. Fixed route metrics such as overloads are not available. However, anecdotal evidence and complaint logs do not indicate any capacity constraints.

Customer Service

CATA customer service metrics show considerable variation from year to year in terms of demand response and fixed route complaints. Complaints per 100,000 passenger trips varied between 0.3 and 2.0 for demand response, and were under 0.34 for fixed route (Figure 37 and Figure 38).

Figure 37. Valid Complaints per 100,000 Passenger Trips – Demand Response (FY 2015–FY 2019)

Source: CATA

Figure 38. Valid Complaints per 100,000 Passenger Trips – Fixed Route (2015–2019)

Source: CATA

Safety and Security

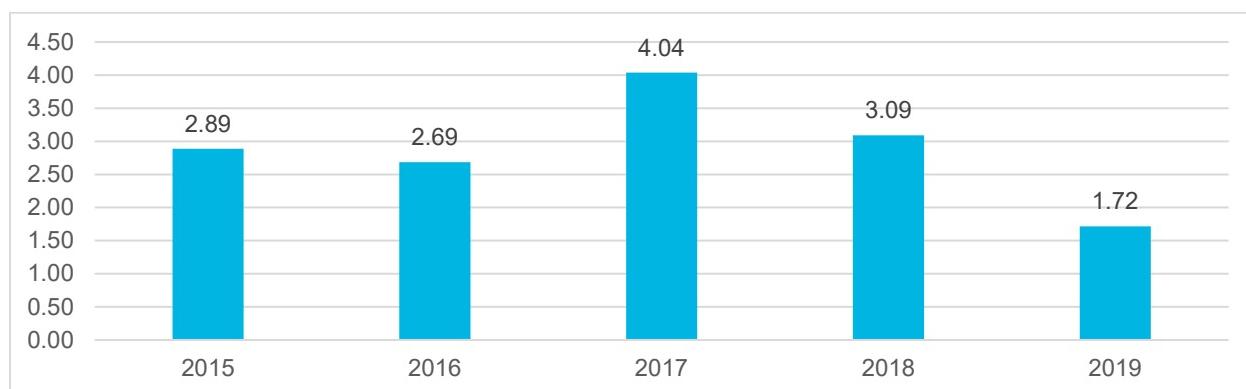
FTA rule 49 CFR 673 requires transit operators who are recipients or sub-recipients of Section 5307 funding to develop safety plans (PTASP) that include the processes and procedures to implement safety management systems by December 31, 2020 (the original deadline of July 20, 2020, was delayed due to the COVID-19 pandemic). As part of the PTASP, performance targets based on safety performance measures (fatalities, injuries, safety events, system reliability) established in FTA's National Public Transportation Safety Plan. CATA adopted a new safety plan on October 28, 2020.

Systemwide, CATA operates a safe system and has had few safety events (Table 37). Preventable accidents per 100,000 miles peaked in 2017 at just over four and have been declining every year since (Figure 39).

Table 37. Safety and Security (FY 2019)

Mode of Service	Fatalities	Injuries	Safety Events	System Reliability (Major Mechanical Failures)
Fixed Route Transit Actual	0	1	1	8
Demand Response	0	0	1	2

Source: CATA

Figure 39. Preventable Accidents per 100,000 Miles – Fixed Route and ADA Paratransit Demand Response (FY 2015–FY 2019)

Source: CATA, NTD, MassDOT

Asset Management

CATA's administrative offices are located in Gloucester and house the organization's maintenance facility. There is no intermodal center or bus hub, although much of the fixed route service in the region serves the MBTA commuter rail station as well as the Rose Baker Senior Center in Gloucester. The administration and maintenance facility has a condition rating of good (Table 38).

Table 38. Facility Inventory Summary

Facility Name	Type	Location	Direct Capital Responsibility	Operator	TERM Rating
Administration Building	Administration, Maintenance, Operations	3 Pond Road, Gloucester, MA	CATA	CATA	Good

Source: CATA

CATA operates vehicles that best serve the relatively lower density of the area being served. Many of the vehicles are body-on-chassis (cutaway bus) vehicles, which are smaller than full 40-foot transit buses. CATA also runs traditional buses on higher ridership routes.

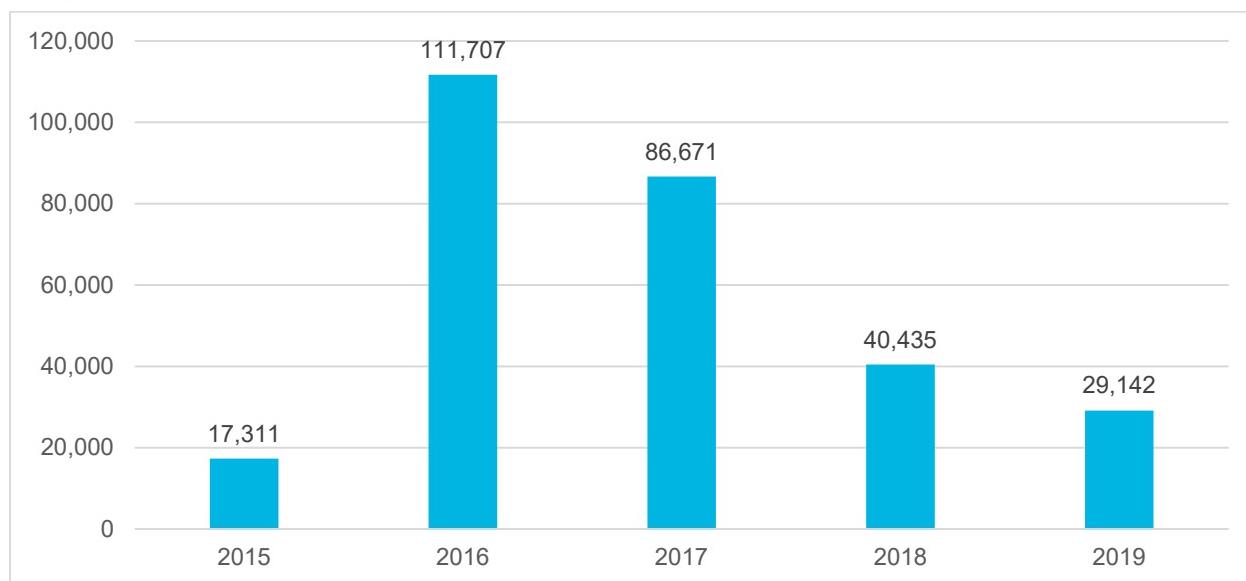
CATA's vehicle fleet is in good condition, with all of its buses and cutaway buses still within useful life. The two trolley-style vehicles (used for summer seasonal shuttles and holiday service) are well beyond their useful lives but are in good physical condition (Table 39). CATA is working on replacing the trolleys (being mindful that the replacement vehicles should be appropriate to the service it is running) and has received funding to replace one. A procurement to replace the remaining trolley is being developed as of the drafting on this plan. The good condition of the rolling stock is reflected in falling numbers of road calls every year since 2016 (Figure 40).

Table 39. Equipment Inventory Summary

Vehicle Type	Total Number	Average Age (years)	Average Mileage	ULB (Years)	% at or past ULB
Bus	9	5.4	155,449	10 - 12	0%
Cutaway bus	23	3.3	35,522	10	0%
Trolley	2	17.0	50,755	7	100%

Source: CATA

Figure 40. Miles Between Road Calls – Fixed Route and ADA Paratransit Demand Response (FY 2015–FY 2019)



Source: CATA, NTD, MassDOT

Peer Evaluation

As part of this plan, a peer review was prepared to gain an understanding of how similar systems operate transit service. This peer review explored five transit services that operate in similar conditions. Although each transit system and routes are unique, the similarities and differences in these five peers provide useful insight into how transit service is provided and operated throughout the country.

Peers were chosen using iNTD,¹⁹ which assigns transit agencies across the country and their service areas with likeness scores for metrics seen in the following tables and charts. iNTD's overall likeness score was used to narrow this list of peers five (Table 40 and Table 41). All data are from FY 2017.

Table 40. Peer Systems Census Data (FY 2017)

System	Town	State	Population	Population Density	Population Growth Rate*	Percent Poverty
City of Independence	Independence	MO	1,595,437	2,354	12.43%	10.7%
City of Plymouth	City of Plymouth	MN	2,854,190	2,793	16.24%	8.9%
Putnam County Transit	Carmel	NY	19,094,455	5,534	4.44%	13.0%
Cecil County Government - SSCT	Elkton	MD	5,555,361	2,804	4.97%	13.5%

¹⁹ For more information on the iNTD process, visit https://www.ftis.org/urban_iNTD.aspx.

System	Town	State	Population	Population Density	Population Growth Rate*	Percent Poverty
County of Hunterdon	Flemington	NJ	19,094,455	5,534	4.44%	13.0%
Cape Ann Transportation Authority	Gloucester	MA	4,433,253**	2,366	7.07%	10.0%

Source: NTD

*Percent change between 2010 and 2017 (Census and American Community Survey data).

**Boston Urbanized Area population.

Table 41. Peer Systems Operating Data (FY 2017)

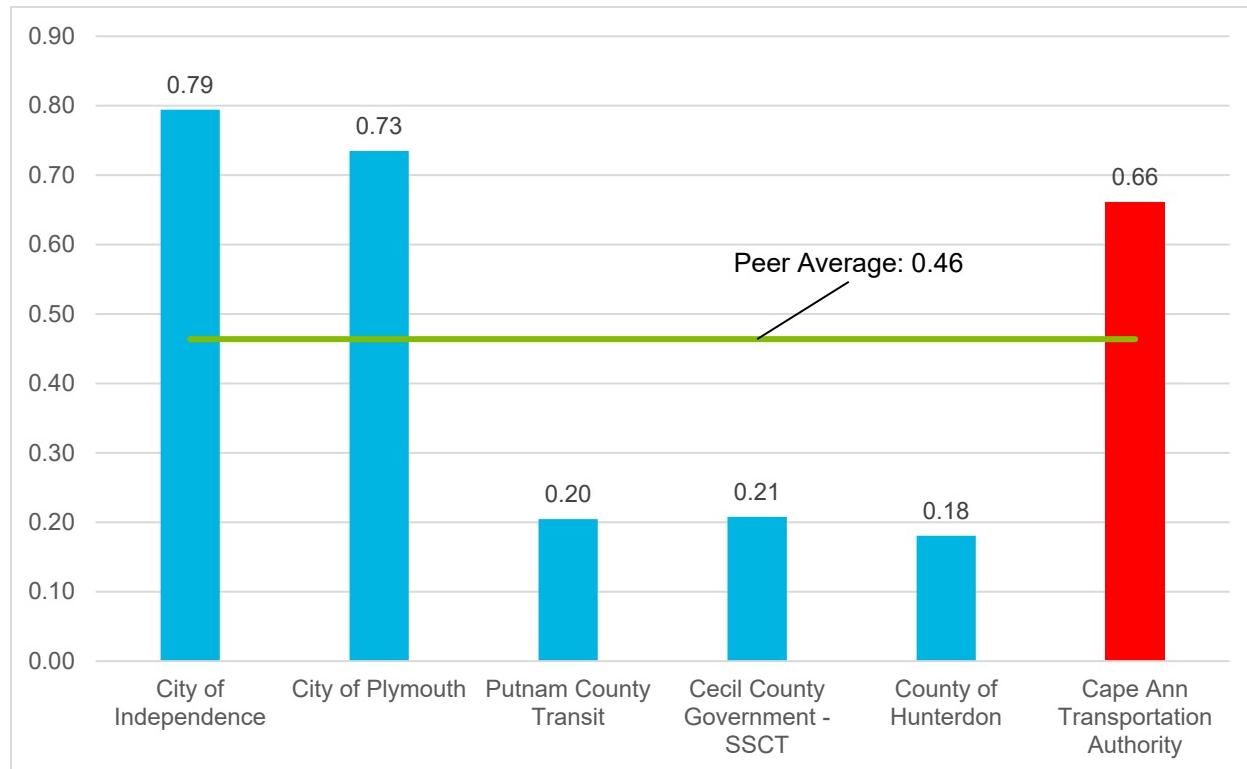
System	Ridership	VOMS % Demand Response*	Operating Budget	Revenue Miles Operated	Revenue Hours Operated	Farebox Revenue
City of Independence	293,459	58%	\$1,977,123	369,474	27,438	\$162,945
City of Plymouth	517,931	22%	\$4,503,137	704817	37,196	\$1,054,673
Putnam County Transit	132,931	50%	\$2,345,253	649,862	32,263	\$234,514
Cecil County Government - SSCT	97,043	13%	\$1,422,991	467,063	22,084	\$130,379
County of Hunterdon	129,928	67%	\$2,810,404	719,808	40,061	\$298,999
Cape Ann Transportation Authority	229,059	42%	\$2,503,213	346,684	23,746	\$182,875

Source: NTD

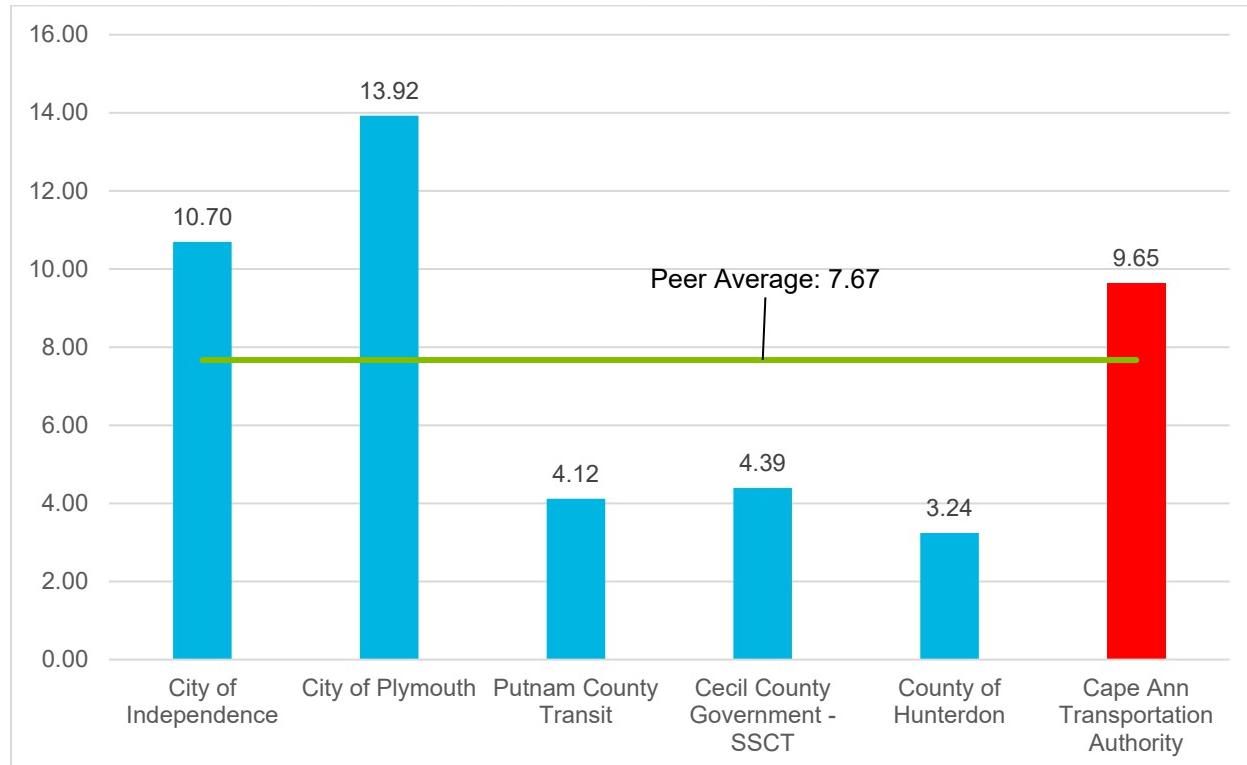
*Percentage of vehicles operated in maximum service (VOMS) that are demand response vehicles.

CATA showed a population of over 4 million, this is because it operates in the Boston urbanized area. However, it is well outside the core communities of the Boston area, and operates in a low-density setting dominated by tourism with some bedroom communities. The total population of the five member communities as of 2018 was just under 62,000 residents.

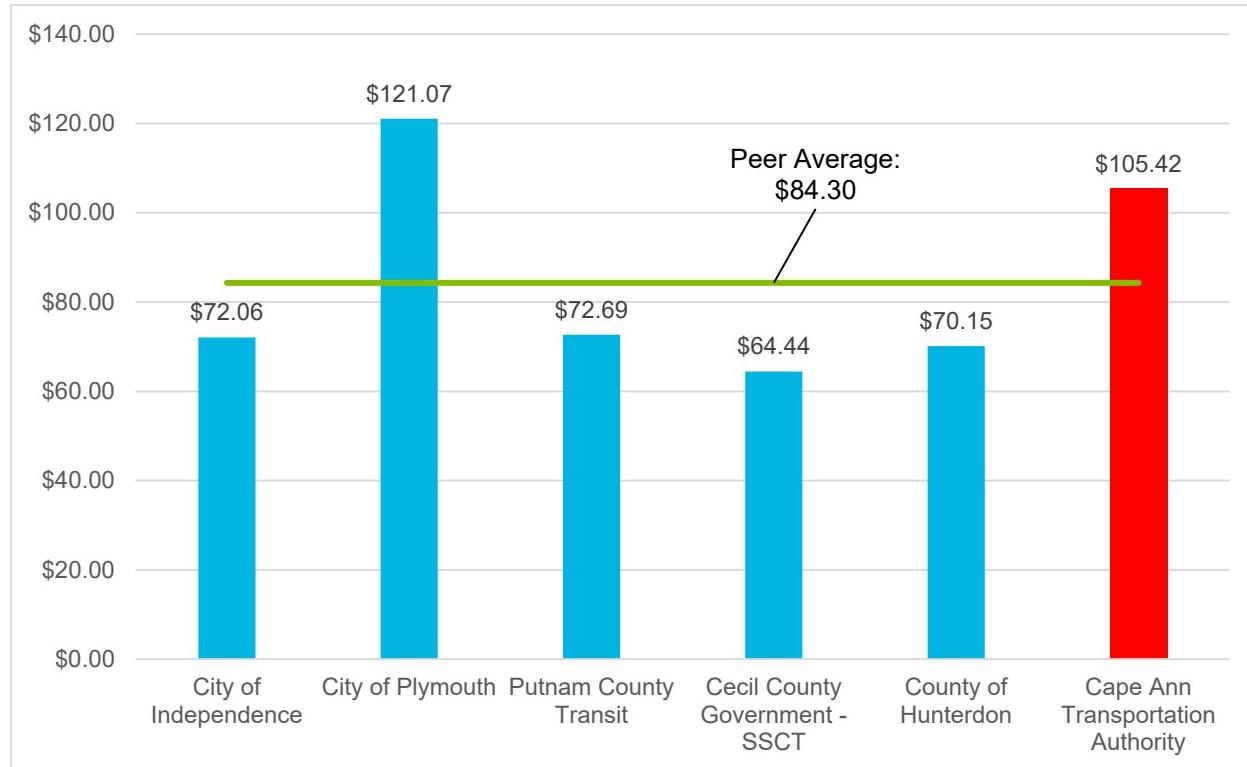
In general, CATA performs favorably against its peers. Rider productivity is moderately higher than the average, and its cost per trip is lower than average. However, the farebox recovery ratio and cost per hour do not perform as well compared to its peers (Figure 41 through Figure 46).

Figure 41. Peer Comparison – Trips per Mile (FY 2017)

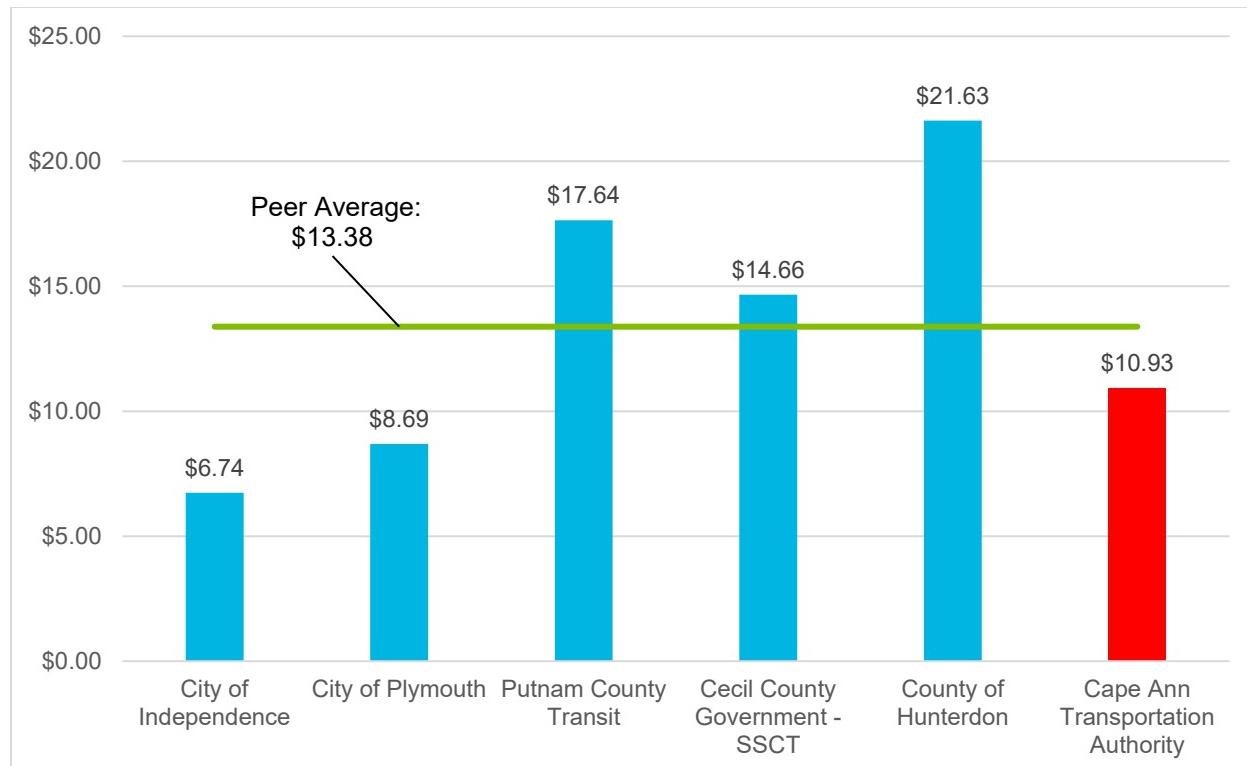
Source: NTD

Figure 42. Peer Comparison – Trips per Hour (FY 2017)

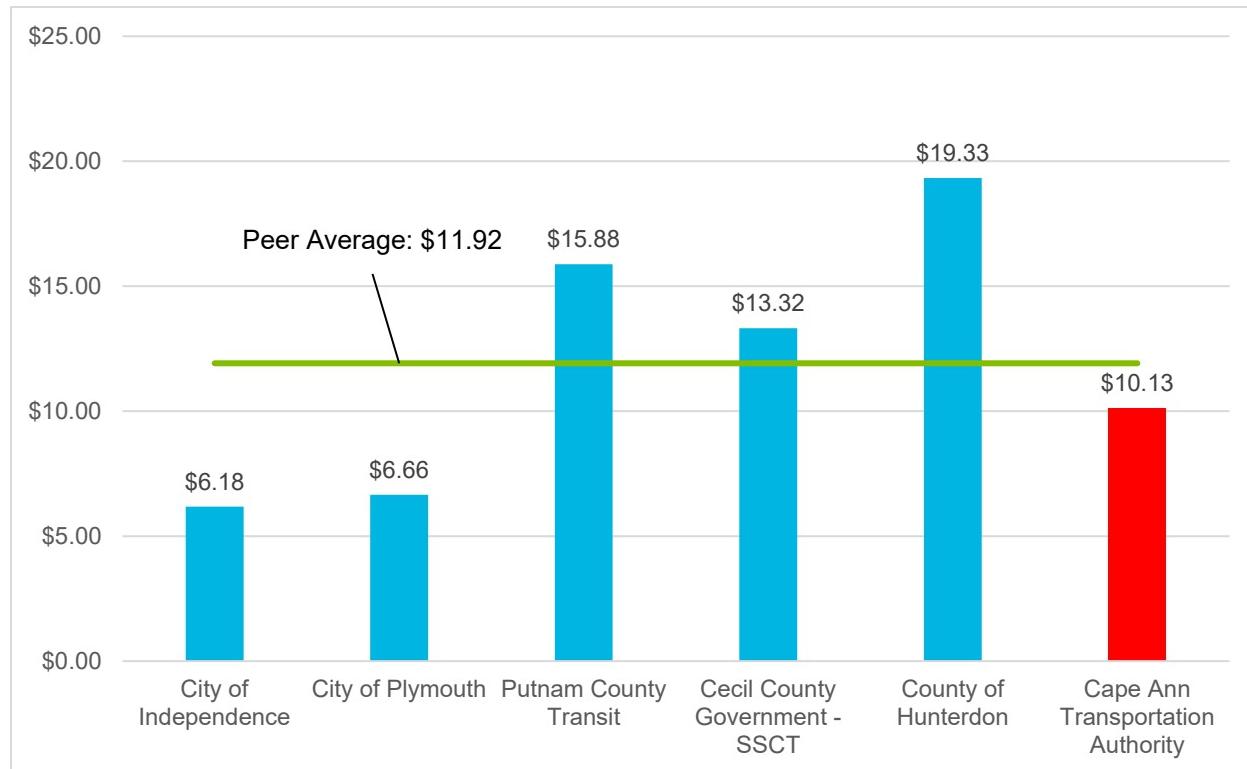
Source: NTD

Figure 43. Peer Comparison – Cost per Hour (FY 2017)

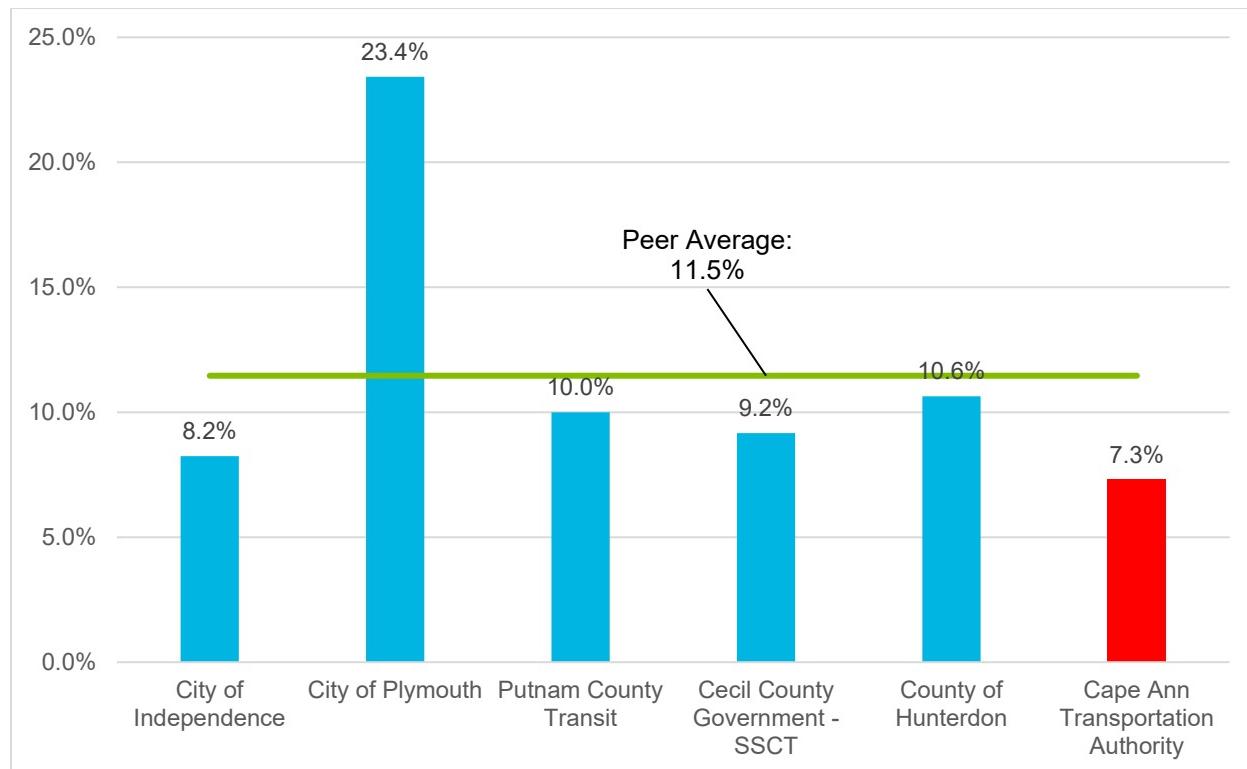
Source: NTD

Figure 44. Peer Comparison – Cost per Passenger (FY 2017)

Source: NTD

Figure 45. Peer Comparison – Subsidy per Passenger (FY 2017)

Source: NTD

Figure 46. Peer Comparison – Farebox Recovery Ratio (FY 2017)

Source: NTD

Appendix B Commonwealth Environmental Policies

Transportation is a leading producer of greenhouse gas emissions (GHG) in the Commonwealth, and the only sector identified through the Global Warming Solutions Act of 2006 (GWSA) with a volumetric increase in GHG emissions; meaning that any effort to reduce emissions must significantly target the transportation system. In 2008, through the passage of the GWSA, Massachusetts committed to reduce its GHG emissions by 80 percent below 1990 baseline levels by 2050. Commonwealth policies and action on environmental sustainability in the transportation sector can be summarized by a series of executive orders, regulations, and recommendations to achieve the Commonwealth's goal of reducing transportation-related emissions by 40 percent over the next 20 years,²⁰ helping to meet the emissions reduction goals of the GWSA.

Massachusetts is establishing an integrated climate change strategy for the Commonwealth through the implementation of Executive Order 569, which was issued in 2017 and had major elements codified in 2018.²¹ It aims to develop a roadmap for climate mitigation and adaptation for the Commonwealth.

Sustainability requirements for transportation are summarized in 310 CMR 60.05,²² where the Climate Protection and Green Economy Advisory Committee advises the Executive Office of Energy and Environmental Affairs on measures to reduce GHG emissions in accordance with the GWSA. The purpose of 310 CMR 60.05 is to assist the Commonwealth in achieving the GHG emissions reduction goals, and to establish an annually declining aggregate GHG emissions limit for MassDOT, as well as general requirements for determining aggregate transportation GHG emissions in the transportation planning process.

To be in line with this regulation, RTAs in particular must conduct comprehensive service reviews; identify service enhancements to increase passenger ridership; identify vehicle technology and operational improvements that can reduce aggregate transportation GHG emissions; and work within the MPO process to prioritize and fund GHG reduction projects and investments.

In Executive Order 579: Establishing the Commission on the Future of Transportation in the Commonwealth, the goal is to determine "how to ensure that transportation planning, forecasting, operations, and investments for the period from 2020 through 2040 can best account for likely demographic, technological, climate, and other changes in future mobility and transportation behaviors, needs and options."²³ This will be accomplished by further investigating topics such as climate and resiliency, transportation electrification, autonomous and connected vehicles, transit and mobility services, and land use and demographics.²⁴ In 2019, the Commission on the Future of Transportation released their report, *Choices for Stewardship: Recommendations to Meet the Transportation Future*.²⁵

The report provides five recommendations with a planning horizon of year 2040. The recommendations include (1) modernizing existing transportation assets; (2) creating a 21st Century "mobility infrastructure" to prepare the Commonwealth for emerging changes in transportation technology and behavior; (3) substantially reducing GHG emissions from the transportation sector; (4) coordinating and modernizing land use, economic development, housing, and transportation policies and investment in order to support resilient and dynamic regions and communities throughout the Commonwealth; and (5) changing current

²⁰ <https://www.mass.gov/doc/a-vision-for-the-future-of-massachusetts-regional-transitAuthorities/download>.

²¹ <https://www.mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth>.

²² <https://www.mass.gov/doc/final-regulation-4/download>.

²³ <https://www.mass.gov/executive-orders/no-579-establishing-the-commission-on-the-future-of-transportation-in-the>.

²⁴ <https://www.mass.gov/executive-orders/no-579-establishing-the-commission-on-the-future-of-transportation-in-the>.

²⁵ <https://www.mass.gov/doc/choices-for-stewardship-recommendations-to-meet-the-transportation-future-volume-1/download>.

transportation governance and financial structures in order to better position Massachusetts for the transportation system that it needs in the next years and decades.

Current RTA-specific sustainable practices are described in Chapter 4 and recommendations for future sustainable practices are described in Chapter 9.

Appendix C CATA CRTP Public Outreach Summary

Survey Instrument

Do you use CATA transportation services?

- Yes (riders)
- No (non-riders)

* THE FOLLOWING ARE RIDER QUESTIONS

We want to know what you think! CATA is updating their Regional Transit Plan in order to create a vision for the next five years and prioritize service improvements. As a valued CATA customer, your feedback is essential to our service and is a key ingredient in our recipe for success. Please take five minutes to complete this survey to help us make CATA the best service it can be!

1. In what Town do you live?

- Essex
- Gloucester
- Hamilton
- Ipswich
- Rockport
- Other (please specify)

2. How often do you use the CATA wheelchair accessible vans?

- Every day
- 1-2 days a week
- 3 or more days a week
- 1-2 days per month
- Rarely
- I don't use CATA wheelchair accessible vans
- I'm not aware CATA has wheelchair accessible vans

3. How often do you use CATA bus service?

- Every day
- 1-2 days a week
- 3 or more days a week
- 1-2 days per month
- Rarely
- I don't use CATA bus service

4. Which CATA bus routes do you primarily use? (Select up to 3 routes)

- Red Line – Rockport to Gloucester to Gloucester High School
- Red Line – Gloucester to Rockport via Thatcher Road
- Green Line – Gloucester to Rockport via Eastern Avenue
- Green Line – Gloucester Blackburn Industrial Park
- Orange Line – Gloucester – O'Maley Middle School and Gloucester High School
- Orange Line – Gloucester Crossing & Business Express Loop
- Blue Line – Rockport – O'Maley Middle School and Gloucester High School – Gloucester
- Blue Line – Gloucester to Rockport via Lanesville
- Yellow Line – Gloucester – Magnolia & Gloucester High School Yellow Line – Gloucester to Magnolia
- Saturday Mall Bus Beverly Shuttle
- Purple Line – Gloucester to West Gloucester to Gloucester High School to East Gloucester
- Purple Line – Gloucester – West Gloucester to Essex Town Line
- Ipswich/Essex Explorer Stage Fort Park Shuttle Rockport Park' n' Ride Trolley Thatcher Road/Red
- Eastern Ave/Green Business Express/Orange Lanesville/Blue Magnolia/Yellow
- West Gloucester/Purple

5. What is your primary trip purpose when you use CATA services?

- Work
- School
- Shopping
- Recreation/Entertainment
- Medical Appointments
- Family Visits
- Other (please specify)

6. How do you typically pay to use CATA service?

- CharlieCard
- Senior CharlieCard
- Student Pass
- Statewide Transportation Access Pass
- Cash
- Other (please specify)

7. Have you used the following service(s) in the past year?

- Uber/Lyft
- Taxi

- Why do you ride CATA service? I don't own a car
- I don't have a driver's license
- Low cost fares
- There is a bus stop near my house
- The bus schedule matches my schedule It is better for the environment
- Other (please specify)

8. What is the major advantage of using CATA service?

- Convenient service
- Good for the environment
- Low-cost of service
- Friendly drivers and staff
- Other (please specify)

9. Where would you like to go that you are currently not able to?**10. Are you aware that there are different fare zones?**

- Yes
- No

11. What are the biggest improvements that CATA should make over the next 5 years?

- Increase service late at night
- Increase service in early morning
- Increase service on weekends
- Increase frequency of buses
- Connect the bus to more places outside of Cape Ann
- Transit tickets on smart phones
- More benches, bus shelters, and other bus stop items
- Other (please specify)

12. How many bags do you typically bring with you on a CATA van or bus?

- 0
- 1
- 2
- 3 or more

13. Has the CATA policy that limits passengers to two bags ever been a problem for you?

- Yes
- No

14. Do you use the CATA website for information?

- Yes
- No

15. How safe do you feel while riding on a CATA vehicle? (1 = unsafe and 5 = very safe).

- 1
- 2
- 3
- 4
- 5

16. What are your concerns when you resume riding on the CATA?

- Social Distancing
- Sanitized - Cleanliness
- Face Coverings
- Bus Schedule Changes
- Other:

17. How do you feel the CATA handled the COVID-19 pandemic? (1 = poor and 5 = excellent).

- 1
- 2
- 3
- 4
- 5

18. As a result of COVID-19 pandemic closures, are you currently working from home?

- Yes, I am working from home
- Yes, I have always worked from home
- No, I cannot work from home
- No, my job/office has re-opened
- Not Applicable (retired, unemployed, student, etc.)

19. Will you continue to work from home once the restrictions are lifted?

- Yes
- No

20. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?**21. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?****22. What is your age?****23. What is your gender?****24. What is your race/ethnicity? (Select all that apply)**

- White/Caucasian
- Black or African American

- Hispanic or Latino
- Asian or Asian American
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- Other (please specify)

25. What is the primary language spoken in your home?**26. What is your highest level of educational attainment?**

- Less than a high school diploma
- High school degree or equivalent (e.g. GED)
- Some college, no degree
- Associate degree (e.g. AA, AS)
- Bachelor's degree (e.g. BA, BS)
- Higher than bachelor's degree

[END OF SURVEY FOR RIDERS]

*** THE FOLLOWING ARE NON-RIDER QUESTIONS**

We want to know what you think! CATA is updating their Regional Transit Plan in order to create a vision for the next five years and prioritize service improvements. As a valued CATA customer, your feedback is essential to our service and is a key ingredient in our recipe for success. Please take five minutes to complete this survey to help us make CATA the best service it can be!

27. In what town do you live?

- Essex
- Gloucester
- Hamilton
- Ipswich
- Rockport
- Other

28. What is the primary reason you do not use CATA transit services?

- I did not know the services were available to me
- I don't know how to use the services (routes, schedules, fares, etc.)
- I do not live near a bus stop
- The schedule doesn't fit my needs
- The routes do fit my needs
- I use my own car

- Too expensive
- Other _____

29. What improvements would get you to use CATA transit services? (select all that apply)

- Extended service hours
- More frequent service
- More bus stops
- Easier to understand services (route, schedules, fares, etc.)
- Discounted fares
- Mobile fare payments
- I would not use a bus no matter what improvements/expansions were made
- Other _____

30. What are the primary reasons you would use the CATA in the future? (select all that apply)

- Convenience
- Cost savings
- Connect to other transit services
- If I didn't have a license
- If I didn't have access to a vehicle
- If I wanted to do something other than drive when I'm traveling
- If I did not want to pay for or find parking
- I would not use CATA in the future
- Other _____

31. What is your primary mode of transportation?

- Drive my car
- Carpool/get a ride
- Uber/Lyft
- Walk
- Bike
- Taxi
- Other _____

32. Do you feel that CATA is a valuable public transportation resource in the region?

- Yes
- No

33. As a result of COVID-19 pandemic closures, are you currently working from home?

- Yes, I am working from home

- Yes, I have always worked from home
- No, I cannot work from home
- No, my job/office has re-opened
- Not Applicable (retired, unemployed, student, etc.)

34. Will you continue to work from home once the restrictions are lifted?

- Yes
- No

35. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?**36. What is your age?**

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-59
- 60-64
- 65 or older

37. What is your gender?**38. What is your race/ethnicity? (Select all that apply)**

- White/Caucasian
- Black or African American
- Hispanic or Latino
- Asian or Asian American
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- Other (please specify)

39. What is the primary language spoken in your home?**40. What is your highest level of educational attainment?**

- Less than a high school diploma
- High school degree or equivalent (e.g. GED)
- Some college, no degree
- Associate degree (e.g. AA, AS)
- Bachelor's degree (e.g. BA, BS)
- Higher than bachelor's degree

41. What is your annual household income?

- \$12,499 or less
- \$12,500 to \$16,999
- \$17,000 to \$21,499
- \$21,500 to \$25,999
- \$26,000 to \$30,499
- \$30,500 to \$34,999
- \$35,000 to \$39,499
- \$39,500 to 43,999
- \$44,000 or more

[END OF SURVEY FOR NON-RIDERS]

Survey Comments

Question	Comment	Response
Q8. How do you typically pay to use CATA service?	Paid by Medical	
Q8. How do you typically pay to use CATA service?	Employee pass (no charge)	
Q10. Why do you ride CATA service?	Trips into Boston for Dr's Apt., very friendly drivers	
Q10. Why do you ride CATA service?	I really don't like driving and dealing with traffic especially when I go out of town.	
Q10. Why do you ride CATA service?	I love. Supporting efficient and effective public transportation. I'd like to use it more.	
Q10. Why do you ride CATA service?	For fun	
Q10. Why do you ride CATA service?	I prefer to let someone else drive and to see how things are going	
Q11. What is the major advantage of using CATA service?	All of the above.	
Q11. What is the major advantage of using CATA service?	Scenic and a pleasant ride	
Q12. Where would you like to go that you are currently not able to?	I'd like the schedule of the business loop to be more convenient if you are coming from Rockport. Right now I have to wait 50 minutes to catch it. Most times I just walk up the hill to Market Basket as its faster.	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	I'm good	
Q12. Where would you like to go that you are currently not able to?	I am satisfied where CATA takes me,,,for my Medical apt.	
Q12. Where would you like to go that you are currently not able to?	Straight from my house on mainstreet rockport to the market basket at gloucester crossing and back	This is included in recommendations

Question	Comment	Response
Q12. Where would you like to go that you are currently not able to?	NSCC	
Q12. Where would you like to go that you are currently not able to?	Cummings center, Northshore Medical	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	Gloucester Crossing - requires a 30+ minute layover at the Gloucester Senior Center to get there	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	Blackburn and Gloucester Loop. Changing buses is confusing	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	apt. in Beverly or Danvers	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	Danvers	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	Christmas Tree store	
Q12. Where would you like to go that you are currently not able to?	I would like to go directly to Gloucester crossing especially when to Y is open.	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	Friends	
Q12. Where would you like to go that you are currently not able to?	Evening use	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	Off cape ann	This is included in recommendations
Q12. Where would you like to go that you are currently not able to?	The Magnolia runs only few times a day and it never is easy to connect with other buses without wasting two or more hours just waiting for the transfer. No covered bus waiting areas makes rainy and snowy days miserable.	CATA increased service to/from Magnolia May 4, 2020 as part of the modified schedule. CATA is looking into replacement/upgrade of shelters.

Question	Comment	Response
Q12. Where would you like to go that you are currently not able to?	Manchester-by-the-Sea	
Q12. Where would you like to go that you are currently not able to?	The service works pretty well for what I use it for (to/from work), but I'm not dependent on the CATA bus (own a car)	
Q14. What are the biggest improvements that CATA should make over the next 5 years?	GPS bus tracking.	This is included in recommendations
Q14. What are the biggest improvements that CATA should make over the next 5 years?	Bis to NSCC in Danvers	
Q14. What are the biggest improvements that CATA should make over the next 5 years?	Split up the Business Express so it doesn't take 1 hour to go around the city	This is included in recommendations
Q14. What are the biggest improvements that CATA should make over the next 5 years?	I'd like the idea of public transport on Cape Ann to become essential rather than an optional inconvenient service. A daily or weekly bus to the airport would be nice once air traffic improves.	This is included in recommendations
Q19. What are your concerns when you resume riding on the CATA? (Select all that apply)	all of the above.	
Q19. What are your concerns when you resume riding on the CATA? (Select all that apply)	I'll be comfortable taking the bus again soon	
Q23. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	I'd like to keep the 11:00AM Rockport to Gloucester Eastern Ave bus.	CATA plans to keep the 11am Rockport to Gloucester Eastern Ave bus.
Q23. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	No I'm sure they want to be just as safe and protected as the public do. You have a great bunch of employee's there	

Question	Comment	Response
Q23. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	I believe CATA is a drain on taxpayers money	
Q23. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	Keep the senior bus for the malls and grocery stores	
Q23. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	I just hope the service is well used and maintained.	
Q23. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	Hopefully no routes will be cancelled	
Q24. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?	Allow more than two bags	
Q24. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?	The bag policy makes it very difficult to shop for a family	
Q24. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?	I suggest that the "2 bag limit" be changed to "no more than you can carry on/off the bus"	
Q24. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?	Some people have to pay for a taxi after shopping because of the bag limit	
Q24. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?	Keep the flag down capability. Keep cost low through subsidiaries, advertise more for locals and tourists. Put a transit station at the Rockport and Gloucester stations.	

Question	Comment	Response
Q24. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?	I'm okay with it. The fares are fair and there really is only so much space.	
Q24. Do you have any additional comments or concerns regarding CATA's bag policy or different fare zones?	I think the fare zones could be eliminated. CATA's service area is so small and it isn't fair Rockport, Magnolia, and W. Glou residents have to pay a premium to get to a grocery store.	This is included in recommendations
Q31. What is the primary reason you do not use CATA transit services?	i don't believe CATA has any stops in Essex, MA	CATA service in Essex is very limited. We are looking into increasing dial-a-ride service.
Q31. What is the primary reason you do not use CATA transit services?	Generally, I am able to drive myself to do my errands. I signed up for CATA in case I could not drive somewhere &, therefore, would need to get a ride (CATA is my backup "just in case"). Because I'm able to normally drive myself, that also allows for a person to take CATA & I wouldn't be taking a seat that someone else really needs (& perhaps that's their only mode of transportation).	
Q31. What is the primary reason you do not use CATA transit services?	Takes too long to go some place local compared to driving	
Q32. What improvements would get you to use CATA transit services? (select all that apply)	I'd use the bus if I could no longer drive.	

Question	Comment	Response
Q32. What improvements would get you to use CATA transit services? (select all that apply)	For many years, Rockport and Gloucester have not had services provided for medical appointments to Beverly, Peabody, or Danvers, i.e. Lahey or MGH Danvers. These services are badly needed by those who do not drive. Although I am able to drive at this moment, this may not always be so. Others cannot drive and it is imperative that CATA soon provide these services to medical appointments, not only to the elderly, but to the disabled, young and old. Please contact me to discuss this further.	This is included in recommendations
Q32. What improvements would get you to use CATA transit services? (select all that apply)	I use the bus when car is in repair and as I get older and feeling not safe to drive, I am sure I use it regularly to go shopping and doctor, chiropractor, dentist appointments	
Q32. What improvements would get you to use CATA transit services? (select all that apply)	If I was unable to drive or did not have a car	
Q32. What improvements would get you to use CATA transit services? (select all that apply)	do not use now, but may in future	
Q32. What improvements would get you to use CATA transit services? (select all that apply)	I don't need it at this time. I believe the service is good for those that do use it.	
Q32. What improvements would get you to use CATA transit services? (select all that apply)	Covid 19 protection	
Q32. What improvements would get you to use CATA transit services? (select all that apply)	Where to get info about bus service and where routes are	This is included in recommendations
Q32. What improvements would get you to use CATA transit services? (select all that apply)	Do not need now	

Question	Comment	Response
Q32. What improvements would get you to use CATA transit services? (select all that apply)	I currently drive myself so no need at present time	
Q33. What are the primary reasons you would use CATA in the future?(select all that apply)	Decrease my carbon emissions!!	
Q33. What are the primary reasons you would use CATA in the future?(select all that apply)	I would use all CATA services if I could not drive, especially those to medical appointments out of the current CATA service area.	This is included in recommendations
Q33. What are the primary reasons you would use CATA in the future?(select all that apply)	retirement	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	using cane or walker	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	Masks need to be required	CATA requires face coverings/masks in accordance with state and local regulations
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	should be promoted more and add Essex to route for Seniors especially	This is included in recommendations
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	No. But, I would appreciate being part of any conversation about improving transportation services in Rockport.	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	I come from Europe and CATA is and should increasingly be considered a very valueable asset to the community.	

Question	Comment	Response
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	Before the virus, there were only 3 buses all day that went my residence on Rt 133 -- that doesn't work if I'm not planning to spend all day at my destination. I've read that on demand services might become available, which would be great. Also, when I moved here, local buses met the trains at rush hour -- I think that the West Gloucester buses now only stop at the Gloucester and Rockport train stations. Local service at the stations would be helpful. I registered for and used the medical van for an appointment at Addison Gilbert -- the staff at the hospital claimed that they were unaware of the medical van services -- it would be good if they could be educated -- maybe a brochure in the doctor's offices? In general, I'm aging and am not looking forward to the day that I need to get out on a State highway in my own car and would feel much less isolated if there was regular public transportation available.	CATA increased service to/from West Gloucester May 4, 2020 as part of the modified schedule. Working to increase awareness of CATA services included in the recommendations
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	I feel CATA is taking necessary safety precautions for riders and staff.	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	No concerns.... it is a valuable resource	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	No, a good asset to have available	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	I will not use CATA this year.	

Question	Comment	Response
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	I would avoid all forms of public transportation until there is a vaccine and Covid is under control. We are not there yet.	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	Safety	
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	adherence to cleanliness rules and masks are needed	CATA requires face coverings/masks in accordance with state and local regulations
Q38. Do you have any additional concerns about riding CATA as service begins to resume/run more regularly?	Hopefully, will be able to transport people out of town to medical appointments	This is included in recommendations

